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ABSTRACT

Guidelines are provided for choosing avocational activities for handicapped persons. Activity descriptions are made for 83 types of games, 98 kinds of sport activities, and 104 nature related activities. (The following volume contains activity descriptions for additional activities. See EC 042 139.) Information concerning avocational activities is presented in two forms. First, a check list is provided and includes information such as a listing of environmental factors, social psychological factors associated with the activity, possible cost of equipment and needed supplies to pursue the activity, an estimate on whether the activity is within the physical and/or mental capacity of an individual with a specified impairment, references, and an estimate of the range of energy expenditure. A brief narrative description then follows the check list. The narrative contains a general description of the kind of activity involved and its relationship to various impairments. No attempt is made to explain activity rules and regulations. The Dewey Decimal and Library of Congress code numbers are presented at the beginning of each narrative. (For the quick find list, see EC 042 140.) (CB)

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GUIDE TO AVOCATIONAL ACTIVITIES

Volume I

Number 5B

May 1972

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CURATIVE WORKSHOP
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EC 042 138E

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GUIDE TO AVOCATIONAL ACTIVITIES

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Sports
*Summer Programs
*Therapeutic Recreation
Volunteer Activities

*ERIC Thesaurus of Eric Descriptors, 866 Third Avenue, New York: CCM Information Corporation, New York 10022, 1972.

PREFACE AND ACKNOWLEDGEMENTS

This is the third publication in a series of works designed to bring to the field of avocational counseling tools and techniques comparable in a primitive way to those developed in vocational counseling. The first step was the construction of an avocational activities classification and coding system. This was published as part of the MILWAUKEE MEDIA FOR REHABILITATION RESEARCH REPORTS series under the title "Avocational Activities Inventory" No. 5 June 1968. It was revised in November 1971 and became No. 5A.*
A set of "Avocational Activities File Labels" issued in April 1972 as No. 5C was constructed to simplify setting up a verticle file to hold information about avocational activities.**

The present Guide to Avocational Activities was prepared under contract with the United States Office of Education, Project Number No. 59-2728 (1-D-055), entitled "Avocational Activities Descriptions." We are grateful to USOE for this support without which this work could not have been undertaken.

The overall model for work was the magnificent and extraordinarily useful classification system, the Dictionary of Occupational Titles.***

Staff members of the Research Department of the Curative Workshop made the following contributions. In addition to the authors, Greg Houghton, Michael Santovec, Angela Varela and David Wiemer wrote some of the activity descriptions. Barbara Olszewski, GPT, helped with the impairment coding. Mary Zolnowski classified the activities by the Dewey Decimal and Library of Congress codes. Michael Santovec and David Wiemer planned and supervised the printing and production processes. Velma Sablan, Gary Macy, Kevin Hanks and Edward Pukelis helped on typing and printing. Miss Maxine Schuldt, R.P.T. Coordinator of Physical Restoration, Mrs. Darlene Rose, former Supervisor of the Speech Department, and Miss Arlene Murray O.T.R. Clinical Supervisor helped in developing the impairment code.

* Avocational Activities Inventory (Revised) Report No. 5A, Nov. 1971, $1.00.

**Avocational Activities File Labels, Report No. 5C, April 1972, $3.00.

Both publications are part of the Milwaukee Media for Rehabilitation Research Reports series, Research Dept., Curative Workshop of Milwaukee, 750 N. 18th St., Milwaukee, Wisconsin 53233.

***U.S. Dept. of Labor, Dictionary of Occupational Titles (3rd ed.), Vols. I and II, 1965 and Supplement 1966, Washington, D.C., Govt. Printing Office 20402.

Mrs. Michael McCormick, R.P.T. and Mrs. Mary Beth Petersen, R.N., independently made preliminary ratings of activities with the impairment code.

Mrs. Madalyn Braun, Supervisor of the Low Vision Clinic reviewed impairment ratings for the blind and low vision impairments. Miss Bonnie Weissenfluh, Supervisor, Speech and Hearing Dept., reviewed the ratings for the hearing, speech and aphasia categories. George Hellmuth, M.D., cardiologist and Director of the Cardiac Work Classification Unit of the Curative Workshop furnished background information for the reporting of energy output in METS, reviewed the assignment of energy expenditure requirements for each activity and set up a model for assigning energy output limits for class III and class IV heart cases.

Mrs. Corrine Aiholzer, O.T.R. Supervisor, Occupational Therapy Dept., Miss Arlene Murray, O.T.R.,Clinical Supervisor, Mrs. Linda Lynkiewicz, O.T.R. Supervisor, Home Service Occupational Therapy Dept., Miss Rosemary Rinzel, O.T.R. and Mrs. Annette Christensen, O.T.R., working as a team, reviewed all other impairment ratings.

Miss Helen Christenson, Librarian, Chief of Processing, Milwaukee Public Library advised on the use of the Dewey Decimal and Library of Congress coding systems. Other library staff members were most helpful in facilitating the library research.

Mr. William Hillman, Program Specialist, Bureau of Education for the Handicapped, U.S. Office of Education and Dr. George T. Wilson, Assistant Superintendent of Milwaukee Schools, Division of Municipal Recreation and Adult Education have helped with advice and encouragement.

We are thankful to many other friends too numerous to mention who reviewed preliminary drafts of narratives and made suggestions about avocational activities with which they were familiar.

Our debt to the existing literature on avocational activities is to be found in footnotes where specific information was cited. Where certain works provided general background they are listed among others, after the narrative descriptions and preceded by the statement, "For further information see:".

In addition, a few books are so unique in their approach that the reader should be made aware of their potential as resource material.

Activities for the Aged and Infirm has a great deal of useful information about activities for severely disabled and elderly institutionalized patients. [1]

Contemporary Psychology of Sport is a collection of both empirical studies and essays on sports which preview what will probably be the more scientific approach to the study of these activities in the future. [2]

The Counselor's Handbook, although designed for employment counseling, provided much helpful information in the section offering sociological data to be considered in fitting an occupation to the temperament and skills of the employee. [3]

Motivations in Play, Games and Sports explores in depth the psychological aspects of many activities. Some of these are described from a psychoanalytic viewpoint. Many are written by psychiatrists, physicians, or social scientists who themselves are or have been experienced and sometimes champion participants in the activity. [4]

The National Recreation Survey is an objective, scientific demographic approach yielding important information on a number of macro-variables. [5]

The Whole Earth Catalog inventories some of the new ideas of the counterculture in a cross between new avocational and vocational possibilities. [6]

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1. Merrill, Toni, M.A., Activities for the Aged and Infirm. Springfield, Illinois: Charles C. Thomas, Publisher, 1967..
2. Kenyon, Gerald (ed.), Contemporary Psychology of Sport. Chicago: The Athletic Institute, 1970.
3. United States Dept. of Labor, Bureau of Employment Security, Counselor's Handbook. Washington, D.C.: U.S. Govt. Printing Office, $3.00.
4. Slovenko, R. and Knight, J.A. (eds.), Motivations in Play, Games and Sports. Springfield, Illinois: Charles C. Thomas, Publisher, 1967.
5. Outdoor Recreation Resources Review Commission, National Recreation Survey. Washington, D.C.: Govt. Printing Office, ORRRC Study Report 19, $2.00.
6. Whole Earth Catalog. 558 Santa Cruz Avenue, Menlo Park, California, 94025.

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INTRODUCTION

Scope, Focus and Style

The descriptions are written from the point of view of a person searching for an avocational activity and are designed for use in avocational counseling by counselors, recreation therapists, occupational therapists, and social workers. They attempt to tell enough about each activity so that a preliminary decision may be made as to whether a given activity is suitable for a specific individual.

In contrast to most textbooks and other literature in the field of recreation, this volume is not written from the point of view of the program developer or recreation leader. It does not attempt to give all of the information necessary to set up and supervise an activity. For instance, detailed game rules are usually omitted. However, whenever possible, sources of additional and more detailed information are included. The emphasis in the narrative is on the phenomenological and other psychological dimensions of the activity, the inter-personal relationships involved and the social setting in which it occurs.

For a number of reasons, the same amount of space is not given each category. Partly this was because it was easier to obtain materials on some activities than on others. It seemed unnecessary to include much, if anything, on activities available to very few people, such as category 368, "Big game hunting in foreign countries." On the other hand an effort was made to explore as many ramifications as possible of such common-place activities as television watching and radio listening because of the importance of these activities in the lives of the homebound disabled.

There was a continuing editorial problem of balancing comprehensiveness of coverage with more intensive coverage of a particular activity. As an example, Slovenko and Knight, in their fascinating book, Motivations in Play, Games and Sports devoted 19 pages to dancing, 7 pages to chess and 18 pages to baseball. With our coverage of a wider range of avocational activities, treating each activity this intensively, much as we should have liked to do so, would have led to an encyclopedia far beyond the reach of our time and money resources.

Most of the narratives were written by the three authors. No effort was made to develop a uniform writing style. It was felt that a variety of styles would better maintain reader interest. Although a considerable amount of factual material has been included in the narratives, much of the material is subjective and impressionistic. It is not expected that readers will agree with all of our impressions of activities. We planned to be provocative and controversial to stimulate counselors, whether they agreed with us or not, to think in new ways about the psychological and sociological framework within which activities are pursued.

In this Guide, information about avocational activities is presented in two ways. A check list sheet which is always positioned on the left hand side of the Guide includes a listing of the environmental factors and social-psychological factors associated with the activity. It sometimes includes the cost of equipment, supplies, etc., needed to pursue the activity. It estimates whether the activity is within the physical and/or mental capacity of an individual with a given type of impairment and it gives an estimated range of energy expenditure expressed in METS.

In most cases, the check lists were prepared for each of the two digit code groups (i.e., 130 Table and Board Games). Where the physical activity requirements were particularly diverse as in "Sports", check list sheets were prepared for each three digit code group (e.g., 221 Bicycling, motorcycling, unicycling"). On the other hand, for the 910 Athletic and Sport Clubs category, no check list sheets were prepared since the requirements had already been rated under the 200 SPORTS section of the Guide.

Following the check list sheet, the activity is described in narrative form. The Dewey Decimal and Library of Congress code numbers are presented at the beginning of each narrative and at the end of some of the narrative statements sources of further information are listed.

Dewey Decimal System Number (s) and Library of Congress Number (s): These are included to enable a reader who wants more information on the activity to go directly to the library shelves without having to first look up in the library card catalog the location of the materials on the activity. The reader is advised to find out under which cataloging system the library which he uses operates. In general, public libraries use the Dewey Decimal system. Many university libraries use the Library of Congress system. The classifications found in libraries will not always agree exactly with the classifications we have made because of normal differences in judgment among classifiers and because the size of the library usually determines how detailed a classification code is used.

Environmental Factors: The environmental conditions under which the activity is usually pursued are listed. The definitions of these terms are given in a glossary on page xiii.

Social-Psychological Factors: The dominant social-psychological factors involved in an activity are listed. The definitions of these terms are given in the glossary on page xiv.

Cost: The price range of equipment and materials essential to carrying on the activity is presented. Prices are those found in stores or mail order catalogs, as listed during the Spring of 1972. The reader is alerted to the fact that these will probably become out-of-date very quickly; mailing costs are not included. This represents the typical cost range for new equipment. Used equipment can usually be purchased for about one-half the cost of new equipment.

References: References are given for some activities to direct the reader to additional information. No inference should be made that these books are the only or best or most recent books on the topic.

Impairment Limitations: Each type of impairment is coded in terms of whether or not the impairment will permit the activity to be carried on. The codes used are shown under abbreviations at the end of this section.

In general, the emphasis is on the impairment rather than on the demands of the activity. This is different from the system used by the Dictionary of Occupational Titles and others. Our rationale is that occupational demands cannot ordinarily be altered greatly to meet the limitations caused by the client's impairments. However, in avocational activities, the activities usually can be altered to some degree to fit the limitations of the impaired persons because in general no minimum level of excellence has to be met. Social expectations dictate some exceptions to this.

A classification of psycho-social impairments was omitted because there is so much variation between patients with the same diagnosis in their capacity for participating in any given activity.

A variable in the rating of the blind is at what point in time the impairment occurred. Thus, the recently blinded have a large store of information and may not need new information input in order to carry on an activity.

With respect to the classification of retardation, we have limited our analysis to the educable retarded (mild, IQ 50-70).* Our analysis makes no effort to classify the activities in terms of the capacities of the trainable retardates (moderate, IQ 35-50), the severe (IQ 20 -35), or the profound (IQ under 20).

The impairment limitation seizures as used here is defined as applying to individuals who actually suffer seizures.

Individuals whose potential seizures are adequately controlled by medication may, prusuant to their physician's advice, not be limited in the ways we have indicated under seizures.

In our opinion, all ratings of impairment limitations are somewhat relative. Events can happen anywhere, even in the course of activities of daily living at home. An uncontrolled epileptic can be injured in a fall regardless of where he is or what he is doing. Therefore our ratings assume that the activity is not hazard-free but merely that it entails no more hazard than would be normally encountered if the participant were pursuing a normal round of non-institutional living.

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* Herber, Rick, A Manual on Terminology and Classification in Mental Retardation, monograph supplement to Am. J. of Men. Def.

The classification of aphasia was very gross. There was no attempt to distinguish between aphasia for oral communication as against aphasia for written language.

The activities believed possible in spite of the aphasia were rated without taking into consideration the fact that aphasia is characteristically associated with stroke which in turn is found with much higher frequency in middle age and old age, all of which make it unlikely that because of his general physical condition the aphasic individual could participate in moderate to strenuous physical activities even though the aphasia itself was not an obstacle to this.

Just as with the blind, what the aphasic can do depends in part on the store of information which he had available prior to the onset of the impairment. Thus, he may already know game rules so that the impairment of the receptive ability may not be as limiting as it otherwise might.

The hands impaired category is complicated by the fact that some impaired individuals learn to manipulate pencils, paint brushes, punch sticks, and other devices with their mouths and head movements to do many of the things other people do with their hands. Thus, for this type of impairment there is a wide range of achievement depending upon individual training, equipment and motivation.

For the activities of reaching, fingering, handling, feeling, stooping, kneeling, crouching and crawling, the definitions published in the Dictionary of Occupational Titles were used.*

The respiratory impairment category includes not only avoiding the environmental conditions listed under Fumes, Odors, Toxic Conditions, Dust, and Poor Ventilation in the Dictionary of Occupational Titles, but also respiratory deficiencies which limit the impaired person's energy output expenditure.

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* U.S. Dept. of Labor, Dictionary of Occupational Titles, Vol. II, 3rd edition, p. 655, Govt. Printing Office, Washington, D.C. 20402.

The recommended energy expenditure limits for classes of organic heart disease are as follows. These are given in calories which are expressed as a measurement in terms of METS.*

Class	Severity Level	Expenditure Limits Permitted
I	prime (none)	Over 7 calories/min.
I	minimal	Energy expenditure continuous up to 5 calories/min., intermittent up to 6.6 calories/min.
II	moderate	Energy expenditure continuous up to 2.5 calories/min., intermittent up to 4 calories/min.
III	severe	Energy expenditure continuous up to 2 calories/min., intermittent up to 2.7 calories/min.
IV	very severe	Energy expenditure up to 1.5 calories/min.

Energy Expenditure: The energy expenditure has been estimated for each of the Avocational Activities. It is measured in a unit called the MET. One MET is the amount of energy expended while resting and it is equivalent to an oxygen consumption of 250 ml/min. or 1 calorie. A MET includes the amount of energy which is expended on the metabolic level in relationship to the energy expended in performing the activity. A MET therefore, is a more accurate measurement of the total energy expenditure. For example, a person playing cards is using about twice as much energy as he would use if he were sleeping. His energy expenditure in METS would be 2.0. This is based on information summarized from the professional literature by cardiologist George Hellmuth, M.D., primarily from "Physiological Effect of Work on the Heart" by Lucien Broauha, appearing in Warshaw, Leon J. (ed.), The Heart in Industry, Paul B. Hoeber, Inc., Medical Division of Harper and Brothers, 1960.

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*Adapted from "Work and Heart Disease in Wisconsin", George Hellmuth, M.D., Journal of the American Medical Association, December 26, 1966, Vol. 198, p. 133-7, which in turn is adopted with revisions from the American Heart Association and the American Medical Association (Committee on Medical Rating of Physical Impairments).

All of the classifications discussed above postulate an average range of human behavior and consequently classification judgements are made in terms of an average individual carrying on the activity in an average way in an average situation. It is easy to point out exceptions to this classification schema, as it is with most other classification systems.

Naturally, in the case of certain severe impairments, the individual should check with his physician when there is any doubt as to whether participating in the activity could result in an accident or further impairment. This is of special concern in the case of advanced impairments, especially Class III and IV heart cases and severe respiratory impairments.

The information and recommendations contained in this publication have been compiled from sources believed to be reliable and to represent the best current opinion on the subject. No warranty, guarantee or representation is made by the authors as to the absolute correctness or sufficiency of any representation contained in this publication and the authors assume no responsibility in connection therewith; nor can it be assumed that all acceptable safety measures are contained in this publication or that other or additional measures may not be required under certain conditions or circumstances.

Originally it had been hoped to have each activity judged in terms of its feasibility for each type of impairment limitation and to report the degree of reliability among judges. The editorial problems in trying to make this Guide as comprehensive as possible led us to group together activities into categories so broad that low reliability among judges resulted.

As the next best available control the following judging or rating procedure was used. The initial ratings were made by the senior author, a counseling psychologist with extensive experience in vocational counseling with the disabled, and by a physical therapist.

An experienced counselor for the blind in a low vision clinic, herself legally blind, reviewed the ratings on the blind and low vision impairments categories. A speech therapy department supervisor reviewed the ratings for the hearing, speech and aphasia categories. A nationally known cardiologist reviewed the energy expenditure requirements for each activity.

Two supervisors of occupational therapy departments working with a team of three other OTR's reviewed all of the impairment ratings not reviewed by the specialists indicated above. Differences of opinion among judges were resolved by discussion, usually resulting in suggesting how an activity could be pursued with suitable modifications.

The ratings presented then represent the result of careful judgments by knowledgeable professionals. They may be regarded as exploratory guidelines against which each counselor using this *Guide* may check his own judgment. They do not offer the degree of assurance which a high measured reliability among judges would give us and further work in this direction is desireable.

Finally, counselors are urged to use the *Guide* as a workbook and enter information about activities in their local area in the blank pages and other pages where some blank spaces are available.

Abbreviations:

Guide:	*Guide to Avocational Activities*
AAI Code:	Avocational Activities Code
DD:	Dewey Decimal System Library classification system number
LC:	Library of Congress classification system number
METS:	Energy expenditure unit (amount of energy expended while resting and is equivalent to an oxygen consumption of 250 ml/min. or 1 calorie)
+	The activity can be performed by an individual with the impairment
O	The activity cannot be performed by an individual with the impairment
M	The activity can be performed in spite of the impairment, provided appropriate modifications in the activity are made. This may include such things as changing game rules, providing additional tools, jigs, and fixtures, or providing help by other people.
S	Some but not all of the activities can be performed by an individual with the impairment.

Glossary of Terms

Environmental Factors

No specific environment - surrounding conditions neither influence nor modify ability to practice activity

Specialized environment and/or climate - surroundings must satisfy certain requirements inherent in the nature of the activity, e.g., snow, ice or water required

Modicum of space - activity is not severely hampered by space limitations

Unlimited space - activity requires extensive use of space

Requires little or no equipment - the extent or expense of material goods to be acquired in order to partake in the activity is so negligible as to be a minor factor in considering the suitability of the activity to a client. Generally less than $10.00.

Equipment a major factor - outlay for additional equipment is extensive or expensive enough to constitute a major factor in considering the suitability of the activity to a client. Generally more than $10.00. Includes cost of supplies or purchases if these are expensive, such as ammunition in target practice or coins in coin collecting.

Equipment normally at hand - while there may be a number of materials required, their nature is such that they are usually included in a list of household items. Or, materials can be easily obtained, e.g., by particular service organizations (public library). Includes easily accessible public or semi-public playing courts for tennis, handball, etc.

Equipment not necessarily at hand - items are less commonly owned, more often purchased, rented or borrowed, e.g., sewing machine

Social-Psychological Factors

Aesthetic - activity appeals to subjective appreciation of beauty, or appreciation of the activity for itself rather than for possible results or practical applications

Utilitarian - activity pursued for its practical, serviceable aspects, or activity directed towards specific goal achievement

Creative - activity lends itself to imaginative variations or innovations

Pre-patterned - the outcome of the activity is already determined by some set standards; individual variations are minimal

Abstract - activity involves thought process of which there is no tangible evidence

Concrete - activity has specific applications, or is experienced in immediate, physical, tangible results

Group effort - activity allows for or requires cooperative work of two or more--includes games or sports with two or more participants on a team

Individual effort - activity is dependent upon the efforts of one person only

Structured - results of activity somewhat limited by pre-determined standards or expectations--includes game and sports rules

Unstructured - activity encourages unlimited creativity, imagination, and initiative

Supervised - activity presided over by some regulatory force--person or rule system--which makes certain demands and controls participation in the activity--includes rules of games and sports

Unsupervised - the manner in which the activity is pursued or practiced is determined by the individual or sets of individuals involved

Opportunity for recognition - successful participation in the activity results in positive reinforcement in the form of praise, awards, expressed admiration, etc.

Little opportunity for recognition - results of the activity important to or noticed by only the individual, little outside reinforcement

Volume III includes a QUICK FIND list and an INDEX.

In the QUICK FIND list under each environmental factor, social-psychological factor, and impairment and energy expenditure range are listed the codes for the avocational activities in which these factors and impairments are relevent. Thus, under "Indoor" are listed the codes 112, 113, 120, etc., indicating that throwing games, indoor games, and target and skill games may all be played indoors.

Only the impairments coded + (can do), M (can do with modifications), and S (can do some of the activities) are listed. The categories coded 0 (cannot do) were omitted from the QUICK FIND list as it is designed to help find things the impaired can do, not what they can't do.

To save space, the numbered code was used rather than classification titles, although admittedly this is hard on the reader. The code numbers were used instead of page numbers because the counselor who uses the Guide regularly will soon memorize the code numbers as they relate to named categories.

The QUICK FIND list is used in this way: If it is desired to find all of the activities which are associated with a specific environmental factor, a specific social-psychological factor, can be pursued with a particular impairment limitation, or fall within a specific energy expenditure range, the pertinent factor is located on the QUICK FIND list. The reader then scans through the Guide following the code numbers listed on the QUICK FIND list. Because the QUICK FIND list is separate and bound by only one staple in the left hand corner, it may be placed on the desk and flipped open next to the Guide to speed up the search.

To locate activities which an individual with a specific impairment can do, first go through the list marked + (can do). If nothing suitable is found then go through the list marked S (can do some of the activities). If no appropriate activity is found there, go through the list marked M (can do with modifications). If you still don't find anything you're on your own (we've done our best!).

100 GAMES

The large numbers of games available has made it impossible to offer comprehensive coverage of this major category of activities. Accordingly, we have described only a few games for illustrative purposes. For exhaustive listings, the reader will need to consult listings of commercial games publishers.

110 Active Games

DD: 796.14, 796.2   LC: GV 1200-1511

Active games, by their very nature, provide exercise and resultant release of tensions. They are excellent icebreakers within groups: it is almost impossible to remain restrained and aloof when one is engaged in an activity which requires a lot of physical activity.

Active games are usually quite competitive, although the competition may be on a very informal level, and their competitive nature provides much of the fun connected with them. For this reason, although they are easily adapted to suit different abilities and needs, it is important that the players have reasonably equal chances of success. There is little enjoyment in playing a game at which one always finishes last or first.

111 Running games, e.g., tag, hide and seek, flags, pom-pom, elimination, etc.

Environmental Factors

Outdoor

No specific environment

Unlimited space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic

Creative

Concrete

Group effort   Individual effort

Structured

Unsupervised

Opportunity for recognition

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M2	seizures	M3	reaching	+	+
hearing	+	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	+	
impaired:						
stooping	M4	wheel chair	0	bed patient	0	
kneeling	M4	semi-ambulant	0	respiratory	0	
crouching	M4	Class III heart	0	Energy Expenditure in METS:	4-10	
crawling	M4	Class IV heart	0			

M1 possible at special recreation camps for the blind
M2 possible if no obstacles in course
M3 possible if not on dangerous terrain
M4 possible if individuals with these impairments do not have difficulty in running

111 Running games, e.g., tag, hide and seek, flags, pom-pom, elimination, etc.

Running games are those in which the game itself is primarily concerned with running, speed, and sometimes, strategic maneuvering.

Running games require considerable space, and they tend to be rather noisy, as do most active games. A good deal of shouting and laughing is almost a necessity for the proper enjoyment of a running game. "Running games" can be as simple as footraces, or can be varied to include involved rules--as in the many kinds of tag.

112 Throwing games, e.g., catch, frisbie, keep-away, pig-in-the-middle, etc.

Environmental Factors

Indoor	Outdoor
No specific environment	
Unlimited space	
Requires little or no equipment	
Equipment not necessarily at hand	

Social-Psychological Factors

Aesthetic	
Pre-patterned	
Concrete	
Group effort	Individual effort
Structured	
Unsupervised	
Opportunity for recognition	

Cost of equipment and supplies: 1972 price range

baseball - $2.00
football - 8.00-15.00
rubber ball - 0.50-1.00
frisbie - 1.00-1.80
whiffle ball - 0.59

Impairment Limitations

blind	M1	balance	S1	hands impaired	1	2
low vision	M1	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	+	expressive	+	feeling	+	0
memory	+	mixed	+	no hands 0		

impaired:					
stooping	M2	wheel chair	M2	bed patient	0
kneeling	M2	semi-ambulant	S1	respiratory	0
crouching	M2	Class III heart	0	Energy Expenditure in METS: 4-8	
crawling	+	Class IV heart	0		

M1 use easily grasped soft objects like bean bags
M2 need companion to pick up object if it drops
S1 may play if sitting down or holding on

112 Throwing games, e.g., catch, frisbie, keep-away, pig-in-the-middle, etc.

Throwing games involve the use of an object--ball, frisbie, or on the very spontaneous level, someone's hat--which the players toss back and forth. Usually this is a cooperative venture, engaged in for the sheer joy of the sport and/or as a means of gaining skill in catching and throwing for use in other games like baseball.

Certain throwing games, e.g., keep-away and pig-in-the-middle, introduce elements of competition. In an informal way, they are versions of some far more sophisticated games like football: the idea of these games is for one team to maintain control of the ball (or whatever) while the other team is trying to capture it. Pig-in-the-middle is a three-player version: two "catchers" throw the ball back and forth until the third manages to intercept its flight; he then becomes a catcher, while the player who would have caught the ball if it had not been intercepted becomes the "pig-in-the-middle." When more than three are playing, teams are formed, and one team tries to "keep away" from the other.

Like running games, throwing games require space; played indoors in close quarters, they pose a considerable danger to lamps, pictures, and other furnishings.

113 Indoor games, e.g., musical chairs, Simon Says, dunking for apples, hunt the thimble or peg, etc.

Environmental Factors	Social-Psychological Factors
Indoor	Aesthetic
No specific environment	Pre-patterned
Modicum of space	Concrete
Requires little or no equipment	Individual effort
Equipment normally at hand	Structured
	Unsupervised
	Opportunity for recognition

Impairment Limitations

blind	M1	balance	M3	hands impaired:	1	2
low vision	M1	seizures	+	reaching	S3	S3
hearing	M2	aphasia:		handling	+	+
speech	S1	receptive	S2	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	S2	mixed	S2	no hands	S3	

impaired:					
stooping	M4	wheel chair	M4	bed patient	M4
kneeling	M4	semi-ambulant	M4	respiratory	M5
crouching	M4	Class III heart	M5	Energy Expenditure in METS:	2-6
crawling	M4	Class IV heart	0		

A wide range of requirements are included in this group; hence there are many exceptions.

M1 Can do if all Simon Says instructions given orally or by touch and orally.
M2 Can do if all Simon Says instructions given by touch and gesture.
M3 Probably can do everything except dunk for apples. May be limited to sitting.
M4 Probably can't hunt for things on floor. Modify Simon Says to head and hands postures.
M5 Carry on everything at a slow pace.
S1 Participate but not lead.
S2 Probably can do everything except Simon Says.
S3 Can do some but not all of Simon Says motions.

113 Indoor games, e.g., musical chairs, Simon says, dunking for apples, hunt the thimble or peg, etc.

Indoor active games combine activity with the restraint required by smaller areas. Usually they involve both skill and speed, but agility is more important than the simple ability to cover distance quickly. Somewhat more structured than outdoor active games, they are still simple enough and enjoyable enough to appeal to a wide range of individuals. Indoor active games are most commonly played at parties, or when inclement weather makes impractical the more boistrous outdoor games.

Environmental Factors

Indoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic Utilitarian

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Tiddly Winks - $1.00-2.77
Pickup sticks - 0.57
Don't Spill the Beans - 2.87
Tip-It - 3.99
Bash - 3.99
Operation - 3.99-5.00
Table Hockey - $4.44-19.88
Table Football - 6.99-34.95
Table Baseball - 6.99
Table Basketball - 6.99-17.88
Marbles - 0.10-1.15
Pool game - 9.99-84.95
Dart game - 4.44-8.88
Jart game - 4.97-7.00
Horseshoes - 8.88
Bean bags - 2.00-8.99

Impairment Limitations

blind	0	balance	M2	hands impaired	1	2
low visions	M1	seizures	+	reachings	M3	0
hearing	+	aphasia:		handling	M3	0
speech	+	receptive	+	fingering	M3	M3
retardation	+	expressive	+	feeling	M3	M3
memory	+	mixed	+	no hands	0	

impaired:					
stooping	M4	wheel chair	M4	bed patient	M6
kneeling	M4	semi-ambulant	M4	respiratory	M5
crouching	M4	Class III heart	M5	Energy Expenditure in METS:	1.6-5
crawling	+	Class IV heart	M6		

M1 limited to close up action like pickup sticks and tiddly winks.
M2 If sitting or otherwise supported
M3 Can manipulate games requiring only one hand but not those like pool, requiring two.
M4 Needs companion to pickup horseshoe, bean bags, etc.
M5 Can do everything except possibly horseshoes but at a slower pace and for shorter time.
M6 Keep to limited energy output games such as pickup sticks and tiddly winks.

120 Target and Skill Games

Many of the games in this general category are games which test physical dexterity but do not demand great physical exertion (123, Target games, primary is the notable exception and is described more fully below). In this, they can be used to advantage for those who cannot participate in strenuous recreation. Mental ability as well as physical dexterity is used in these games. Much of it is problem-solving--how to get out of a particular game situation. The solution rests in evaluation and response. Playing technique and luck combine to determine the outcome of the game. This puts the player in active and passive roles and tests his reaction to each. An important element of the games in categories 122, 123, and 124 is that of competition. Satisfaction in playing is as much the result of outmaneuvering the opponent as it is pride in the evidence of physical and mental skills.

121 Balance games--games involving balance and steadiness of hands, e.g., pickup sticks, Don't spill the beans, Tip-it, Bash, Operation, etc.

Games of the first category are simplest. Rules are minimal as are possible variations on the development of play. Central to the game is the physical control. The suspense that builds up as part of the effort to exercise this control helps maintain interest in the game.

122 Table sports, e.g., table hockey, football, baseball, basketball, etc.

DD: 794.7 LC: GV 881

Games of this sort try to follow as clearly as possible the pattern of the actual outdoor sport. Therefore, they presuppose a basic understanding of those rules of play. Some of the indoor versions of outdoor sports are electric or equipped with manual levers--in the same fashion as pinball machines--to simulate real play; others are homemade with paper, pencil, and a compass. Games like electric football are lowest on demands of strategy. The games patterned on the pinball machine set-up call mostly for good physical coordination and enough mental agility to quickly decide on the right offensive and defensive moves. The homemade version and baseball games place more emphasis on ability to plan strategies. Because the object of most table games is to come as close as possible to the original game, these table sports possibly could be accepted as suitable compensations for inability to play the real thing.

123 Target games, primary--games in which an object is thrown at a target, e.g., darts, Jarts, ring-toss, horseshoes, bean bags, clothes pin in a milk bottle, etc.

DD: 796.24 LC: GV 1095, GV 1470-1511

These are the games in which physical ability is the crucial factor. They sharpen coordination and skills while demanding little mental exercise, and so cater to the desire to show-off what you can do. Competition adds a further dimension. For sheer physical exercise and enthusiastic play, games of this sort are well suited. In most of these games, individuals with one arm impairment suffer no handicap in competing with nonimpaired people.

123 Darts

Darts, in contrast to many of the related throwing-at-target games has less bending over to pick things up which is an advantage for people who because of poor balance, poor coordination or lower extremity impairments are handicapped in bending over. The few darts which do not stick in the board may be retrieved more easily if the dart board is placed over a table or bed. For safety, don't be a target; stand behind the player who is throwing!

123 Ring-toss, Ringstack

Ringstack is a low-skill game requiring the placement of variously dimensioned colored rings on a tapered pole, the largest ring being placed on the bottom of the stack and the rest continuing upward in diminishing sizes. The stack is capped by a plastic screw-on ball.

Ringstack is an excellent device for developing sense (sight) discrimination. It is easy to complete by the trial-and-error method. It requires mobility and manual skills. The game can be played alone or with others. It is useful in providing additional sight, touch and kinesthetic sensory stimulation.

Some perseverance and a willingness to try different approaches is required if first attempts fail at hitting the right combination. The game teaches the player self-reliance and rewards him with a sense of accomplishment if successful. It is estimated that some individuals with one or more of the following impairments may successfully participate in the activity: audio impairments, cerebral palsy, mental retardation, Perthes disease and visual impairments.

The game can be adapted to a severely impaired cerebral palsied child by having the child indicate to the recreational therapist which ring to place on the stack.

123 Horseshoes

LC: GV 1095

Horseshoes are pitched back and forth between two stakes set 40 feet apart, the object being to ring the stake with the horseshoe and if not, come as close as possible to the stake. The game can be played as singles between two players or as doubles between two teams of two players each.

Many families own sufficient land to make it possible to construct a court in their own back yard which is a great convience over sports which require a great deal of travel to reach the place where the sport is carried out. This has the further advantage of a focus for neighborhood social interaction.

The sport is well adapted for a wide age span and for both sexes. Individuals with the use of only one arm may play it on an equal basis with the non impaired person.

For further information see:

Reno, O.W., Pitching Championship Horseshoes. New York: A.S. Barnes and Co. 1971

Cobb, Ellis F., The Horseshoe Pitchers News Digest (periodicals). Post Office Box 1606, Aurora, Illinois

123 Bean bags

Bean bags is played by throwing ten cloth bags each full of beans through holes in a board set at a 45 degree angle with the floor with the lower end resting on the floor and the upper end supported by hinged wooden legs. There are five different sized holes in the board yielding scores of 5, 10, 15, 20, and 25. The smaller the hole, the larger the score.

Like horseshoes and darts, vertical as well as horizontal control is needed. There is much bending, stooping and kneeling to retrieve the bean bags many of which are recovered from under the bean bag board.

This game is well adapted to the living room, dining room or recreation room of the average sized house or apartment. It offers a great deal of practice in mental addition of fives and multiples of five.

124 Target games, secondary--games in which an object is propelled toward a target by means of a second object, e.g., pool, billiards, bumper pool, shuffleboard, marbles, tiddly winks, etc.

DD: 794.6 - .73 LC: GV 1099, GV 891-9

Depending on whether the players consider games as recreation or as serious business, games in this category hold remarkable possibilities for social intercourse. Now, a real pool or billiard player is dead serious about his game, so these social possibilities will remain, for him, unexplored. His joy will come from knowing that he knows how to play his game and his satisfaction will derive from playing it. The movie "The Hustler" well illustrates the intensity of this kind of play. But that kind of devotion would seem to classify the game more as life's blood than as avocational activity.

By contrast, the prospect of a real tiddly wink player strikes one as rather ludicrous. Most people tend to dabble in these games, rather than pursue them as a profession. It is this attitude towards games, that of the dilettante and not the devotee that suggests the added dimension of games as inducing social contacts. The players' very lack of intensity in play makes it possible for them to recognize other features of the game - its humorous or ridiculous sides. Mistakes, bad plays, bad luck are much easier pills to swallow when taken with a healthy sense of humor. The general hilarity that attends the more glaring errors adds a spirit to the game that serious pursuit often kills. This lack of seriousness may, if extending further than some would wish, become irritating; on the other hand, there are occasions when humor is a definite requisite. Finding the right balance is the concern of the players involved.

Environmental Factors

Indoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Creative — Pre-patterned

Abstract — Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Dice games - $1.99-6.99
Parcheesi - 1.29-3.49
Chinese checkers - 1.28-2.77
Monopoly - 3.87-5.99
Chess - 5.00 - 44.95
Candy Land - $3.44
Bingo - 2.50
Yahtzi - 1.99
Sorry - 3.39
Trouble - 2.77
Life - $4.41
Easy Money - 3.97
Careers - 3.86
Checkers - 1.29
Stratego - 3.97

Impairment Limitations

blind	M1	balance	+	hands impaired:	1	2
low vision	+	seizures	+	reaching	+	M5
hearing	+	aphasia:		handling	+	M5
speech	+	receptive	M4	fingering	+	M5
retardation	M2	expressive	+	feeling	+	+
memory	M3	mixed	M4	no hands	M5	

impaired:

stooping	+	wheel chair	+	bed patient	+
kneeling	+	semi-ambulant	+	respiratory	+
crouching	+	Class III heart	+	Energy Expenditure in METS: 2-2.5	
crawling	+	Class IV heart	+		

M1 Use braille, checker boards, dice, bingo, chess, etc. Can do chinese checkers.
M2 Well suited for "work bench" game, have difficulty with chess.
M3 Well suited for "work bench" game, probably can do chinese checkers, have difficulty with monopoly, chess, etc.
M4 Need visual clues.
M5 May need adaptive device to move playing pieces around or a companion to move the pieces.

130 Table and Board Games

Mentioned in this category are some of the games people play. It is theorized that playing games is parallel to coping with real-life anxieties.* The world, in play, is reduced to the area of the game. The situations encountered in games are paradigms of confrontations within realistic social activities. Games challenge the player to creative responses in his attempt to master given situations. The player tries to make the best of his situation within the limits of the game rules. While skill is often an important factor in play, games are not solely a test of intellect. Games incorporate a social setting and the player's response to this is a test of emotional maturity. Enough social pressure can be exercised in a game to foster positive social behavior. Games, as a gauge of emotional response, might be put to analytic or therapeutic use. That is, one might employ game-playing either to test the individual's emotional capacities or to correct or improve upon them or both. The games as categorized below stress different characteristics of play and call for different degrees or kinds of skills.

*Motivations in Play, Games and Sports, Slovenko, R., and Knight, J.A. (eds.), Charles C. Thomas, Springfield, Illinois (1967), p. 56.

For further information see:

Wood and Goddard, The Complete Book of Games. 1940.

Cassell's Book of Sports and Pasttimes. London, c. 1890.

Murray, H.J.R., History of Board Games Other Than Chess. Oxford, 1952.

Gibson, Walter, Family Games America Plays.

131 Children's Board Games, e.g., Uncle Wiggily, Candy Land, etc.

DD: 793.7 LC: GV 1312

These games are the least complex. The rules are simple, the object is usually the fastest progression through a number of spaces. The progression is determined largely through external factors over which the player exercises little control -- e.g., the spin of dice, directions of a card or certain square on the board. The extent of personal influences on the game is limited, as for example, in Uncle Wiggily one may be faced with a choice between losing a turn or going back a number of spaces. Even this choice is brought about by external factors. Since satisfaction cannot derive from the exercise of one's skill in the game, the only satisfaction left is that of winning the game. This by no means faults such games, but rather suggests that their value lies in the opportunity they present to encourage social interaction and foster emotional growth. Social pressure discourages such forms of behavior as sulking and ill-tempered words or, on the other hand, gloating and rubbing it in. Thus, games can help channel behavior along socially acceptable and emotionally mature lines.

132 Games of chance, e.g., bingo, dice games, roulette, Yahtzi, etc.

DD: 795.0 - .3 LC: GV 1303, GV 1309, QA 273

The most intriguing facet in games of chance is the identity of the opponent. In no legal instance is another player ever the opponent because no other player ever assumes the role of the antagonist, except incidentally. For example, Yahtzi is a game won by rolling certain combinations of numbers which earn certain points. The player with the highest number of points wins. The other player exercises no control over the combinations a player rolls. Nor does the player himself, save substituting loaded dice. If the player doesn't win, it's through no fault of the player who did win, except to the extent that the winning player rolled better combinations, a circumstance over which he also had no control. In games of chance, no personal influence ever legally alters the fortunes of the game. This can make these kinds of games quite frustrating. It also explains why so many "games" grow up around games of chance - the rituals which attend participation in the game, e.g., certain clothes or gestures are "lucky" and will assure success. For some, this duel with fate can absorb them to fanatic degrees. For those who do not fall prey to her clutches, games of chance may be a form of recreation all the more enjoyable for its being so arbitrary. Win or lose, it is no reflection on them.

133 Playing piece games - games in which the goal is to move one or more playing pieces toward a particular place, e.g., parcheesi, Sorry, Chinese checkers, Kimbo, Trouble, etc.

DD: 793.5 LC: GV 1312

Like the games mentioned in 131, these games involve a "race" to get pieces through a certain progression before the opponent does. Unlike those games, however, these allow for greater control over the situation by the player himself. These games are a mixture of skill and luck. The basic rules are simple, but they allow for variations which in turn allow for strategies determined and executed by the player. For example, in Parcheesi, a player may, in a blockade, retard his own progress in order to retard the progress of an opponent. The player determines possible outcomes of an action, evaluates them and decides what course to take. In Chinese checkers, pieces are set up to assist as many jumps in a turn as possible As this strategy can work to the advantage of either player, the outcome of the game often is determined in the final moves. In any of these playing piece games, hostilities and aggression are worked out within the context and limitations of the game itself. However simulated these situations may be, emotions they arouse are genuine and often very powerful. Once emotions get to the boiling point they must either explode or be sublimated. It may seem, then, that these games go beyond the realm of what can accurately be termed "play" "It is not because we take the game so seriously that robs it of the fun. Rather, it is that we take ourselves so seriously."* A sense of humor in playing games, the ability to laugh at oneself, implies the ability to be self-critical. It may be, then, that participation in games which involve emotions so deeply may possibly be used as instruments to encourage healthy self-criticism.

*Slovenko, R. and Knight, J.A. (eds.) Motivation in Play, Games and Sports, Springfield, Illinois, Charles C. Thomas, 1967, p.56.

134 Money games, games in which the goal is to acquire money, property, etc

DD: 793.5 LC: GV 1312

These games allow the player to decide much for himself his course of play but also includes the outside chance factor. That is, the player may decide the strategy he wants to pursue in order to become successful, but certain arbitrary factors of the game may interfere. For example, a player at Monopoly may decide to build up his property, but he may not land on the right places in time. Most often the games feature such contingencies and the player learns to be clever, resourceful and flexible. These games have instructive value. The player must learn to take calculated risks and to take the setbacks and disadvantages that ensue if his plans are frustrated. One might question the lesson of ruthless pursuit of one's own goal (opportunities to destroy one's opponent are especially evident in Monopoly). One might question also the goals so many of the games espouse, which deal primarily in economic gain and social status. As with the other games, there is as much to learn in losing as in winning, not only in terms of successful strategies, but also in terms of social behavior and coping with disappointments.

135 Dual combat games, e.g., checkers, chess, Stratego, etc.

DD: 794.1-.2 LC: GV 1313-1457, GV 1461-3

These are games in which the level of play adjusts to the player's level of skill. That is, the games set up certain regulations of moves and an arbitrary goal. Within that framework, it is the players who determine the succession of moves and develop the strategies to achieve that set goal. Because the level of play is largely determined by the players and because there are only two players involved, it is important that the players be evenly matched. The game is frustrated if the competition offers too little or too great a challenge. This match between two players is important to the game in another way. These are games of agression which, like many of the other games, arouse powerful emotions. When the game is only between two, the rivalry and possible hostility can become much more intense and intensely directed. Yet, games which demand concentrated mental effort demand also emotional control.

Checkers is dual combat at its most basic level. Checkers has been the format for many other dual combat games. Its simple rules and restricted game plan belie its strength. Checkers, played skillfully, can become a studied game of scientific play. Game play improves through practice. The uniformity of moves makes study of the game possible without a frustratingly complicated exercise of mental gymnastics.

(cont. on next page)

135 Dual combat games, e.g., checkers, chess, Stratego, etc. (cont.)

Chess is believed to be the most popular game in the western world. Many more men than women play the game; it is a kind of surrogate warfare. The aggressive nature of the game is its most important and characteristic element. The object is to force the opposing king into a situation in which he must surrender: to do this, opposing defensive pieces are captured or intricate traps are laid for the king. Once the king is finally forced to admit defeat, even though he may be surrounded by his own defensive forces; this psychologically climactic moment of admitting defeat is frequently very intense.

Although the aggressive tendencies which are evident in chess are so important, players must sublimate them in order to play rationally. Chess carries with it a high degree of status, because both society and the players themselves are aware that competence in chess requires above-average intelligence. But not even the most intelligent player can plan rationally if he is unable to keep his emotional responses under control. The chess player, therefore must be able to deal with his own feelings as well as with the strengths of his opponent.

Individuals frequently play chess by telephone or mail, each player having a graphic model of the distribution of pieces. This type of play might be especially helpful for shut-ins; many prisons also run programs by which convicts are allowed to carry on such long-distance games with people outside the prison, providing both social contact and intellectual stimulation.

Stratego, though still a game of strategy, includes an additional factor-chance. The chance is taken when a player attacks a piece whose rank, because hidden, is unknown. This adds a surprise element to a game in which the player must have resource to strategic planning, cleverness, deception, foresight and a good memory. Unlike chess, in which all the possible outcomes of moves can be determined by mental exercise and careful scrutiny, Stratego makes use of suspense and hidden possibilities to effect an intriguing game.

139 Table and board games, n.e.c.

Workbench is a low-skill device incorporating two rows of nonremovable wooden pegs set in holes on a flat wooden surface. The pegs are "capped" at each end. The child simply pounds all the pegs down with a plastic hammer. Then the hinged top can be flipped over and the pegs driven back through. The tension of each row of pegs can be adjusted by turning a screw.

The Workbench is an excellent developer of co-ordination and is useful in providing additional sight, touch, hearing, and kinesthetic sensory stimulation. The repetitive nature of this device can induce monotony, but some variations may be applied.

It requires mobility and manual skills and may be carried out alone. This is a fun "task" game that gives a child the satisfaction of a job completed, while allowing him to "work" at his own pace. A child can busy himself productively for some time with this device, especially if some adaptations are employed.

It is estimated that some children with one or more of the following impairments may successfully participate in the activity: Audial impairments, cerebral palsy, mental retardation, muscular dystrophy, and Perthes disease.

Adaptations: the pegs can be depressed by pushing down with the fingers, thereby increasing kinesthetic skills. Besides measuring accuracy (co-ordination), the child can be tested for speed, using either the hammer or his hands to depress the pegs. Also, the worker, by reaching his hand underneath the board, can push depressed pegs upwards at random to develop the child's reactions as he pushes them back down.

140 Card Games

Environmental Factors

Indoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Abstract Concrete

Group effort Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Playing cards - $0.89
Cribbage board - 2.66
Card shuffler - 7.99
Poker chips - $2.00
Poker chip stacker - 3.88 (w/chips)

Impairment Limitations:

blind	M1	balance	+	hands impaired:	1	2
low vision	M2	seizures	+	reaching	M5	M6
hearing	+	aphasia:		handling	M5	M6
speech	+	receptive	+	fingering	M5	M6
retardation	M3	expressive	+	feeling	+	+
memory	M4	mixed	+	no hands	M6	

impaired:					
stooping	+	wheel chair	+	bed patient	+
kneeling	+	semi-ambulant	+	respiratory	+
crouching	+	Class III heart	+	Energy Expenditure in METS:	2-2.5
crawling	+	Class IV heart	+		

M1 Braille cards.
M2 Large print cards.
M3 May manage simple games; probably have difficulty with bridge.
M4 Probably have difficulty with games like bridge or hearts where it is important to remember what cards other players hold. Should be able to manage solitaire and cribbage.
M5 May need card holder.
M6 In addition to card holder, may need adaptive device or companion to manipulate cards.

140 Card games

Playing cards became popular among the European aristocracy during the Renaissance, and they have been a part of Western culture ever since. Card games can help to develop mathematical and logical skills, but they are chiefly valuable as a pastime and a situation in which informal social contacts may be made.

Whether or not gambling is involved, card games always include elements of competition. There are difficulties involved, of course. A too-agressive player or one who is overly diffident may not only be himself unable to enjoy a competitive game, but may spoil the other players' pleasure. Whenever gambling is involved, even if it is only for pennies, there is the danger that a player may begin to take the game too seriously for it to be fun. Generally speaking, though, card games are friendly affairs, and there are enough different kinds of games to suit nearly anyone. In games in which the luck of the deal is important, players who are very demanding of themselves in other areas may be able to use a bad run of cards as a rationalization for a losing streak.

141 Solitaires

DD: 795.43 LC: GV 1261

Any card game played by one person alone may correctly be called solitaire, and there are many such games, covering a wide range of difficulty and sophistication.

Solitaire pits the individual against himself and the luck of the cards; the solitaire enthusiast is likely to be chiefly concerned with improving his skill at a particular favorite game rather than with winning. The choice of a game is of paramount importance; some individuals will best enjoy a game they can win at all or almost all the time, while others will find this situation boring, and be more interested by a game which they can win only occasionally but which will provide them with a definite challenge. Similarly, the amount of luck vs. skill involved in any game will affect the player's enjoyment, and the ratio in the game chosen will depend on the individual's own inclinations. Because it is the enjoyment of the game itself that is the key factor in solitaire, it is very important to choose a game neither too difficult nor too simple for the individual player's talents.

142 Games for two, e.g., cribbage, gin rummy, etc.

DD: 795.418 LC: GV 1295.C9, GV 1295.R8

With the exception of solitaires, the importance of card games is not in the games themselves but in the interaction which takes place between or among the players. In addition to being engaged in competition with himself and the cards, the player is pitted against others.

Two-handed card games are usually the least formal games. The players, without having to worry about inconveniencing others, can adjust the speed and intensity of their game to suit their personal preferences, and can even interrupt the game for conversational purposes. Games for two are most often played simply to while the time away, and the players are more likely to play for points than for money.

143 Games for three or more, playing as individuals, e.g., poker, rummy, hearts, old maid, blackjack, canasta, seven card stud, etc.

DD: 795.412 LC: GV 1295.C2, GV 1295.B, GV 1295.R8, GV 1251.3

As the number of players in a card game increases, the importance of mutual consideration grows. While the players of a two-handed game may agree by unspoken mutual consent to play slowly and casually, in a larger game it is only courteous to pay fairly close attention to the cards. Within this framework, a group which plays together regularly will soon find an equilibrium point at which all players will be happy about the amount of social interaction and the amount of importance being attached to the game itself.

It is in these games that gambling takes on real importance. Many of them have little meaning if they aren't played for something, even if it be only matchsticks or plastic chips. The danger of an over-serious gambler upsetting the game is a real one; so are the problems of the poor loser and the individual who seems not to care whether he wins or not. If an individual is on a winning streak, it will be noticed that other players tend either to band together against him or to lose interest in the game.

Many games are psychologically interesting in that the rules require that one player punish another. The game of "hearts" goes beyond this and sometimes requires a player to choose which player to punish. Even though it is only a game, there can be considerable emotional involvement in either giving out or receiving punishment.

In Blackjack each player attempts to collect cards which total as near to 21 as possible without exceeding that number. Cards are dealt to the player one at a time until he feels that to accept one more card would mean exceeding 21. It is necessary to add and subtract fairly rapidly and this would indicate simple arithmetic skills. Five former patients who had suffered strokes were observed playing blackjack together. All performed the game well and no difference in arithmetic skills were noted. Each player quickly and correctly added his cards together and subtracted the sum from 21 and indicated whether he wanted more cards from the dealer.

144 Games for three or more, playing as teams, e.g., bridge, whist, sheepshead, pinochle, etc.

DD: 795.416 LC: GV 1281, GV 1295.P6

Games in which the players form teams are extremely popular. The immediate advantage to playing in teams, of course, is that it gives the player an ally with whom to contend against the other players. This can give the player a sense of security.

Partnerships often grow into lasting friendships which continue long after the bridge game is over. Husband-wife teams are common, but sometimes dangerous, since arguments about the game can carry over into other areas. It is important that partners not have skills which are quantitively and qualitatively very different; if one partner begins to feel that he is carrying the team, the result can be disastrous to the players' friendship.

(cont. on next page)

144 Games for three or more, playing as teams (cont.)

As in other card-game situations, the attitude of the players towards the game is crucial. The player who makes too big a deal out of winning or losing spoils everyone's pleasure; worse still is the player who gets very upset about losing and then blames the loss on his partner's carelessness or lack of skill. Team games do often result in close friendships both within and among teams, and the kind of informal get-togethers that spring from "next week, our house," invitations.

150 Knowledge and word games

Environmental Factors

Indoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic	
Creative	**Pre-patterned**
Abstract	
Group effort	**Individual effort**
Structured	**Unstructured**
Supervised	
Opportunity for recognition	

Cost of equipment and supplies: 1972 price range

Playing cards	- $0.89
Scrabble	- 3.97
Spill + Spell	- 3.66
Jeopardy	- 3.88

Impairment Limitations

blind	M1
low vision	+
hearing	M2
speech	M3
retardation	M4
memory	M5

balance	+
seizures	+
aphasia:	
receptive	M6
expressive	M7
mixed	0

hands impaired:	1	2
reaching	+	M8
handling	+	M8
fingering	+	M8
feeling	+	+
no hands	M6	

impaired:	
stooping	+
kneeling	+
crouching	+
crawling	+

wheel chair	+
semi-ambulant	+
Class III heart	+
Class IV heart	+

bed patient	+
respiratory	+

Energy Expenditure in METS: 2 - 2.5

M1 use braille scrabble. Probably can't do paper and pencil games, charades and memory games such as Brainstorm
M2 too slow at guessing games
M3 if stutters write out answers to guessing games
M4 can simplify all of these games as appropriate
M5 probably can't do memory games
M6 simple paper and pencil games only
M7 nonverbal output games only
M8 will need adaptive device or assistant for paper and pencil games and Brainstorm

150 Knowledge and Word Games

DD: 793.73 LC: GV 1483-1487

Knowledge and word games can be used to sharpen particular skills or simply as a pleasant way to pass time in a social situation. They require varying degrees of mental alertness and ability and foster some intellectual interchange among the participants. Observation of an individual playing knowledge and word games can also be helpful in the diagnostic process. Most games of this kind require verbal facility, but some, notably I Spy, are essentially non-verbal.

For further information see:

Borgmann, Dmitri A., Language on Vacation. New York: Charles Scribner's Sons, 1965.

Boye, Neva (compiler), Handbook of Games. Chicago: H.T.Fitzsimons Co., Inc., 1945.

Kohl, Marguerite, and Young, F., Games for Grown-ups. New York: A.A. Wyn, Inc., 1951.

Shipley, Joseph T., Playing with Words. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1960.

Wood, Clement and Goddard, Gloria, The Complete Book of Games. New York: Halycon House, 1938.

151 Paper and pencil games, e.g., tic-tac-toe, squares, battleships, etc.

DD: 793.7 LC: GV 1202 A-Z

Paper and pencil games require individual players rather than a team effort. They increase personal interaction among the two or more players and require intellectual effort. Since they are mental rather than physical games, they can easily be adapted to suit the particular needs of an individual who is physically handicapped.

152 Guessing games, e.g., 20 questions, I Spy, animal-vegetable-mineral, etc.

DD: 793.73, 793.7 LC: PN 6366-6377

Guessing games are good for large or small groups of any age. There is a large variety of such games, running through a range of difficulty to include games to fit the abilities of almost any group.

I Spy is an excellent example of this kind of game. Players choose an object which they hide after sending one player from the room. When this player returns, he begins to hunt for the hidden object. The others clap or sing or do both loudly when the hunter is near the hiding place; when he is a distance away from the object, the clapping and singing become soft. This continues until the hidden object is found.

I Spy is excellent for individuals with impaired receptive communication facility. They do not have to understand words and the game may even be played if the individual has some degree of hearing loss or even total vision loss. It is highly

(cont. on next page)

152 Guessing games (cont.)
suitable for cross cultural interpersonal exchange where there is a language or concept barrier.

153 Spelling games, e.g., Scrabble, Spill 'n' Spell, spelling bee, etc.

Spill 'n' Spell is a simple vocabulary game which incorporates much the same basic idea as Scrabble. Six former patients who had suffered strokes were observed as they performed Spill 'n' Spell. Scrabble had been tried previously and it was discovered that several of the patients had a great deal of difficulty with it. Accordingly, a simplified version of Spill 'n' Spell was substituted.

Procedure: The game is played by shaking approximately 18 dice out of a plastic cup. A letter is printed on each side of the dice (Braille markings may be made for blind or low vision). Each player tries to use the letters on the top side of the dice to form as many words as possible. Normally, players must form intersecting words, but in this case it was decided to allow the patients to form separated words. However, the ability to intersect words was considered to be evidence of a higher degree of skill in forming and using words. The total score for each turn is computed by squaring the total number of letters which the player used.

Six patients tried this game. The best player, on his first turn, used 12 letters, spelling three words of four letters apiece. He formed words rapidly and while the others were taking their turns, he quietly gave hints of possible words. On the second turn, he used 14 letters, spelling four words of six, three, three, and two letters and also formed a word seldom used, "cougar." He did not intersect any words, but this may be attributed to the fact that he took his turn first and thus did not gain much advantage from seeing other players form words.

The difference in performance in the next three players was slight. To rank the players, total score, the length of words, the ability to intersect words, the rapidity with which words were formed and the total number of letters used were all taken into account. The relative ranking of these players might easily be altered if different weight were given to different aspects of their performance.

The rate at which one patient formed various words was significantly reduced by what appeared to be sight impairments. Another patient needed a great deal of coaxing and encouragement even to complete words.

154 Charades

There are several types of this game, and the more variations, the better. Categories may be single words, movies, songs, books, names of persons, etc. This game may be played in singles or groups.

Players decide upon a word or words to act out. Usually, teams leave the room to decide on the charade. Words are acted out in syllables or according to short words. The most important thing here is the effective use of sign language and images. The great possibilities in using this game with the deaf are obvious.

156 Memory games, e.g., Concentration, Brainstorm

DD: 793.735 LC: PN 6366-6377

Brainstorm uses a regular deck of playing cards. The point of the game is to match cards of the same number which have been placed face down after having been seen once. The cards are deliberately placed in as spatially irregular a nonpattern as possible. Recall is entirely contingent on remembering the spatial arrangement of the cards. Five former patients who had suffered strokes were observed playing this game together. All had played cards for many years and all had played this game about two months before. After four complete games were played, the relative ability of each player was clearly established.

This game might be developed as a supplment to clinical tests of memory deficit.

160 Puzzles

Environmental Factors

Indoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort Individual effort

Structured

Unsupervised

Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Jigsaw puzzles - $0.69-8.88
Crosswords - 0.25-1.00
Diacrostics - 0.25-1.00

Impairment Limitations

blind	S1	balance	+	hands impaired:	1	2
low vision	+	seizures	+	reaching	+	M1
hearing	+	aphasia:		handling	+	M1
speech	+	receptive	S5	fingering	+	M1
retardation	S2	expressive	S4	feeling	+	+
memory	S3	mixed	S5	no hands	M1	

impaired:					
stooping	+	wheel chair	+	bed patient	+
kneeling	+	semi-ambulant	+	respiratory	+
crouching	+	Class III heart	+	Energy Expenditure in METS:	2.-2.5
crawling	+	Class IV heart	+		

M1 need device or assistant to help move pieces and write
S1 may do mental arithmetic puzzles and help on crosswords
S2 may do some of these at a simple level
S3 may have difficulty with those dependent on a retrievable fund of knowledge
S4 possible, if able to write
S5 jigsaw only

160 Puzzles

DD: 793.73 LC: GV 1491-1507

Puzzles are artificially-created problems designed to test the ingenuity of the would-be solver. There are many different types of puzzles, and many levels of difficulty within types, so no one ought to be unable to find a puzzle which will challenge his particular talents without being impossible for him to solve.

Puzzles serve as an excellent pastime, and most people find that they have a generally tranquilizing effect. When solving a puzzle, the individual is taken up wholly by the problem at hand, and his other, more serious "real" problems are likely to be forgotten. The feeling of having grappled with a problem and solved it is invigorating and can help to restore an individual's confidence in his ability to solve the other problems with which he finds himself faced.

161 Jigsaw Puzzles

DD: 793.73 LC: GV 1507. P47

Jigsaw puzzles require patience, a reasonable amount of coordination, and the ability to perceive spatial relationships. Like other puzzles, jigsaw puzzles are available in a wide range of difficulty, from the ones designed for young children which have a few large pieces to those with many small pieces and an abstract or monotone design.

One of the nice things about jigsaw puzzles is that they can be worked at a little bit at a time over a long period. The true jigsaw fan will often leave his puzzle set up in a convenient place so that he can work on it during spare moments for days or weeks. It is, of course, helpful to keep dogs and small children away from the puzzle; few things are more frustrating than to discover that the one piece needed to finish a complete reproduction of Mona Lisa has been chewed beyond recognition.

162 Crosswords, diacrostics, etc.

DD: 793.732 LC: GV 1507.C7, PN 6369.6377

The person who is fascinated by words and the letters which build them will certainly find pleasure in working word puzzles—crosswords, diacrostics, anagrams, and the like. Puzzles like these can not only challenge, but actually improve, one's knowledge of his native language.

The crossword is the most common, best known, and probably simplest of these word puzzles; although the format is simple, the puzzle itself may be quite complex and difficult. Other puzzles require doubling back and forth among steps. The anagram, for example, calls for words to be formed by rearranging the letters of other words. The puzzle may first call for a word of a certain numbers of letters which fits a definition; to solve the anagram, the letters of that word must then be rearranged.

Jigsaw puzzles require a flat surface, but word puzzles may be solved almost anywhere: on a bus, train, or plane, in bed, or curled up in an easy chair. Word puzzles make virtually no noise, require little expenditure of physical

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162 Crosswords, diacrostics, etc. (cont.)

energy, and an aficionado may work them by the hour without suffering from boredom. Word puzzles are an essentially solitary activity, but two people may occasionally collaborate on one, and there is always the situation in which anyone who happens to be present is called on for help, "Does anybody know a four-letter word for 'assistance'?"

163 Mathematical Puzzles

DD: 793.74 LC: QA 95, QA 270

The mystic and the mathematician are not so far apart as they would at first appear to be. Success in solving mathematical puzzles depends less upon formal training in the mathematical sciences (although the individual who is interested in the way numbers work and in finding new relationships among them will usually have studied mathematics as much as he could) than it does upon having an artistic sense or feel for the way numbers work. Some basic knowledge is essential, but it is the person who delights in playing with numbers, finding new ways to make them do their thing, who will most enjoy mathematical puzzles and who will have the most success with them. Such people should beware of too much contact with mathematical puzzles, they can be psychologically addictive.

164 Mechanical Puzzles

DD: 793.7 LC: QA 95

People who like to dream up strange new machines, without much caring whether or not they would have any practical value, are likely to enjoy mechanical puzzles. Sometimes a mechanical puzzle consists of a description of a set of conditions and/or apparatus, from which the puzzler is expected to find a solution to the given problem by applying mechanical principles. It is more usual for puzzles to be available with actual working parts--like a model kit that comes without any instructions. Interest in the concrete, in motion, in engineering, and talent for reasoning out spatial and mechanical relationships are good indications of probable success at solving mechanical puzzles.

Model Racing Games

Environmental Factors		Social-Psychological Factors	
Indoor	Outdoor	Aesthetic	
Modicum of space	Unlimited space	Creative	Pre-patterned
Equipment a major factor		Concrete	
Equipment not necessarily at hand		Individual effort	
		Structured	
		Unsupervised	
		Opportunity for recognition	

Cost of equipment and supplies: 1972 price range

Model boats - $0.94-12.88
Model cars - 3.99-28.88
Model airplanes - 5.99-11.99
Model trains - 0.94-49.99

Impairment Limitations

blind	0	balance	S1	hands impaired:	1	2
low vision	+	seizures	+	reaching	M1	0
hearing	+	aphasia:		handling	M1	0
speech	+	receptive	+	fingering	M1	0
retardation	+	expressive	+	feeling	+	0
memory	+	mixed	+	no hands	0	

impaired:					
stooping	S2	wheel chair	S2	bed patient	S3
kneeling	S2	semi-ambulant	S2	respiratory	+
crouching	S2	Class III heart	+	Energy Expenditure in METS: 2-4	
crawling	+	Class IV heart	S3		

M1 could operate but not readily build models
S1 difficulty in controlling model airplanes in flight
S2 could operate cars and trains mounted on tables
S3 could assemble but not operate

170 Model Racing Games

The chief attraction of model racing games is that they are helpful in propelling the player into a fantasy world in which his powers far exceed those he posesses in real life. The timid driver can send his model car skittering around a track at a speed which drivers of the Indianapolis 500 might envy, and the fellow who gets seasick in a row boat can sail his sloop to a victory at sea. Similarly, such activity can enable the ordinarily mild-mannered person to engage in a kind of cut-throat competition in which he would ordinarily never get involved. Competition in these games tends to be friendly but quite intense. Many enthusiasts enjoy building their own model or improving on the design and construction of models which they have purchased.

171 Boats

DD: 623.819 LC: VM 298

Boat racing is a natural outgrowth of the desire all little boys seem to have to float something in any available lake, pond, or good-sized puddle. A summer Sunday in New York's Central Park would convince anyone that model boat racing has indeed come a long way, and reached a delightful level of sophistication far beyond the wildest dreams of most would-be sailors. Races, both spontaneous and arranged, take place all over the world. Since it is the least mechanized kind of model racing, boat racing retains a great deal of grace and romance, and its relatively slow pace allows the imagination plenty of time to build fantasies of pirate ships and privateers.

172 Cars

DD: 629.221 LC: TL 237

By far the most popular type of model car is the "slot car." Models run on an electrified track, and the "driver" can control the speed of his auto. Excessive speed on curves can cause the model to jump off the track, sometimes blocking the path of another car. The emphasis in this type of racing is on skill, although some cars may be built so as to run faster than others. A few years ago, the most popular way to race model cars was for the individual to take his model to a raceway where for a fee he could race on a large track against others in his class. Although there are still some raceways of this type, the smaller home track has become more common, and the racing less formal.

173 Airplanes

DD: 629.1331 LC: TL 770-777

Racing model airplanes is a complex activity, always requiring supervison and adequate safety precautions. Model airplanes may be propelled by any of a number of types of engines, and they may be controlled either by a direct wire or by "remote control" devices. In any case, the racing of model planes requires a relatively high degree of mechanical ability and skill in handling the model itself. It is important to have a fairly large field in which to race the models, one which is free of such hazards as high-tension and electrical wires.

174 Trains

DD: 625.19 LC: TF 197

Model trains are so mechanically complex that only the most skillful individual can hope to tamper successfully with their workings. The creatively inclined train enthusiast is more likely to get involved with building a realistically decorated setting for his tracks, complete with model villages and plant life. There is great variety in the kinds of model trains available, from the very simple ones designed for young children to the highly sophisticated and beautifully scaled models made for older hobbyists. Racing model trains is not a terribly common activity among model train enthusiasts, but those who do indulge are apt to go in for it in a big way, setting up parallel tracks and trying to evenly match their skills and their models with other enthusiasts in order to have the delight of stiff, real competition. There are many organized groups of model train fans, the members of which are more likely to enjoy and indulge in racing than is the individual who enjoys model trains as a solitary hobby.

190 Miscellaneous

Environmental Factors

Indoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic	Utilitarian
Creative	Pre-patterned
Abstract	Concrete
Group effort	Individual effort
Structured	Unstructured
Unsupervised	
Little opportunity for recognition	

Cost of equipment and supplies: 1972 price range

Dominoes - $2.49
Ouija - 2.85

Impairment Limitations

blind	M1	balance	+	hands impaired:	1	2
low vision	+	seizures	+	reaching	+	S4
hearing	+	aphasia:		handling	+	S4
speech	+	receptive	S2	fingering	+	S4
retardation	S1	expressive	S3	feeling	+	S4
memory	S1	mixed	S2	no hands	S4	

impaired:					
stooping	+	wheel chair	+	bed patient	+
kneeling	+	semi-ambulant	+	respiratory	+
crouching	+	Class III heart	+	Energy Expenditure in METS: 2-2.5	
crawling	+	Class IV heart	+		

M1 use Braille dominoes and dice
S1 dominoes and ouija
S2 dominoes, if rules are already known
S3 dominoes
S4 everything but ouija

191 Dominoes

DD: 795.3 LC: GV 1467

The game is played with 28 dominoes. Dominoes are small rectangular blocks of wood or plastic with varying numbers of white spots on them. The number of spots on a block range from 0 to 12. The object of the game is to attach a domino to the next domino which is only permitted if the attaching domino has the same number of spots. Points are made if the total number of spots at each end of the domino line add up to five or a multiple of five.

The game is excellent for teaching very simple mental arithmetic. It may be played by two, three or four players.

For further information see:

Palmer, Victor F., Dominoes. New York: A.S. Barnes & Co., 1944.

192 Computer games

DD: 510.78 LC: QA 74, QA 76

There are, in general, two types of computer games. In the first kind, the computer acts as your opponent. Computers have been programmed to play a variety of games, varying from tic-tac-toe to chess. In this type of game you make a move and then the computer makes a move to counteract your move. The computer also acts as scorekeeper and provides a continuous printout of the status of the game.

In the second kind of game, the computer acts primarily as score keeper. This is very helpful in real-life simulation games (194) by permitting more complicated and more challenging situations. The computer evaluates your actions and projects their consequences on the current situation, thus updating the situation. Based on the results of your previous action, you can either continue or modify your strategy in obtaining the goal of the game. You may either play against other persons who are simultaneously taking actions which modify the current situation, or you may play a type of solitaire in which you attempt to solve a problem, with the computer letting you know how you are doing.

To the uninitiated, the readout (printout) from the machine may, depending on the way it is worded, give a false impression that this is an immediate personal message from another person, thus incorrectly and mystically "personalizing" the machine.

193 Ouija

DD: 133.93 LC: BF 1585-1623 GV 1541-1561

The Ouija board has the letters of the alphabet, numbers, and "yes" and "no" printed on it. A wooden block which slides easily on the board is used by two players, each of whom rests his fingers on the block.

Questions are asked the board which answers according to the movement of the block in resting on the "yes" or "no" or in spelling out the words or indicating numbers.

Players are cautioned to be careful to try not to deliberately influence the direction which the block takes. Sooner or later movement of the block occurs. To the participants, the block seems to move itself because they are not aware of pushing it.

Sometimes very sophisticated and astonishing answers are reported by the board. Spiritualists tend to accept these as communications from people not present, either living or dead. Psychologists believe that the minds of the participants, without their conscious awareness, control the movement of the block through unrecognized pressures of finger, hand, and arm and spell out answers some of which (either consciously or unconsciously) are partially or fully known to the participant.

194 Real-life simulation games

DD: 658.124, 658.85 LC: 5549.5T7 - T58

Games which closely resemble real-life situations are used in managerial and training programs and in schools but are of sufficient interest to be pursued as an avocational activity. Players are given a set of conditions simulating situations to be found in existing organizations and decisions are to be made and solutions found. These have been used in simulating sales campaigns, and in teaching political science and many other subjects.

On a larger scale there are attempts to simulate a segment of the total society such as a city.

For further information see:

Avedon, E.M. and Sutton-Smith, B., The Study of Games. New York: John Wiley & Sons, 1971.

200 SPORTS

210 Professional Sports Observation

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Unsupervised

Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

ticket for game - $3.00-6.00
radio - 6.50-40.00
television - 65.00-500.00

For further information see:

Keith, Harold, Sports and Games. New York: Thomas Y. Crowell Co., 1969.

Sutherland, Evan and Kate (ed.), Complete Book of Sport. London and Sydney: Ward Lock and Co., Ltd., 1969.

Wind, Herbert Warren (ed.), The Realm of Sport. New York: Simon and Schuster, 1966.

Impairment Limitations

blind	S1	balance	+	hands impaired:	1	2
low vision	S1	seizures	+	reaching	+	+
hearing	M2	aphasia:		handling	+	+
speech	+	receptive	M2	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	M2	no hands	+	
impaired:						
stooping	+	wheel chair	+	bed patient	+	
kneeling	+	semi-ambulant	+	respiratory	+	
crouching	+	Class III heart	+	Energy Expenditure in		
crawling	+	Class IV heart	+	METS: 1.5-3.2		

M2 may be able to see enough to understand and enjoy the event
S1 listening to radio or television

210 Professional Sports Observation

Viewing a sports event in person and viewing it on television bear few similarities. The two activities have only the sports event itself in common. Attending a professional sports event, the spectator enters a colorful environment of which the athletic contest is only a part.

The television spectator often has a view of the athletic event superior to that of his counterpart in the stands, but the telescopic lens of the TV camera cannot completely capture the excitement and richness of the sport being viewed, or of its live followers.

A visit to a professional sports event immerses one in the heady atmosphere which a large, loud crowd always creates. The spectator witnesses an intriguing variety of human behavior, dress and speech. Professional sport in all forms has always cloaked itself in an aura of glamor and drama, and if live spectators did not recognize this aura and seek to participate in it, professional sport would not survive.

There are some who believe that professional sports events constitute a ritual, secular but real, in which commonly held values are enacted in a stylized, larger than life scale. This is a moot point, but it is undeniable that a professional athletic contest, especially between rival teams, thoroughly captures the imagination of the live spectator and conquers his strongest social inhibitions. In the heat of a particular game, the normally placid, restrained personality can boil over into behavior which one might judge pathological in any other situation. To witness this phenomenon, or to experience it oneself, one must attend a sports event in person because no television image can suffice.

Each professional sport itself has its own delights to offer the spectator. In baseball, the slow pace of the game affords the viewer a perfect background for pleasant conversation. Attending a golf tournament is like a walk in a park or a large picnic. Football and large-scale indoor sports like hockey and basketball are the ones which lend themselves to the kind of hysteria mentioned above.

In any event, the experience of traveling to a sports arena and joining an enthusiastic crowd in its escape from petty cares is one which all ought to know.

The intellectual demand on the observer is that the person be aware of the rules by which the sport is played, i.e., knows how the winning score is is attained, and as a supplementary activity, is able to read sports pages which contain reviews and summaries of the results.

A betting pool established among the homebound handicapped who are limited to observation via TV or radio can be carried on by a telephone network which may get them acquainted and set up a framework for continuing contacts.

220 Individual Non-competitive Sports

In many organized sport activities, competition is the factor which inspires effort and exertion in the participant. Without adversaries, many sports lose all meaning. Individual, non-competitive sports activity, on the other hand, derives its strength from its lack of competitive structure; it provides opportunity for self-improvement on every level (physical, psychological) without the burden of having to defeat an opponent.

Some might say they pursue an individual-oriented sport for pleasure and relaxation, while others might view it as a personal challenge to their endurance. In any case, the wide variety of individual, non-competitive sports activities offers great opportunity for those who like either fun or self-imposed misery leading to increased physical fitness.

For those with shaky self-confidence or some physical disability, these individual-oriented sports offer healthful activity without fear of embarrassment. A physically or emotionally handicapped person is to acutely aware of his weaknesses to risk the humiliation of defeat in a sport which separates the winners from losers.

Individual non-competitive sports constitute one of the best possible avenues toward social interaction. The relative lack of structure of these sports means that they can be practiced in highly informal settings with few limitations on the number of participants. What could be more delightful than the companionship of a group on a bike hike or a soiree on ice skates? Of course, some of these sports require more equipment and more physical fitness than others, but many are suitable for anyone.

221 Bicycling, Motorcycling, Unicycling

Environmental Factors

- Outdoor
- No specific environment
- Unlimited space
- Equipment a major factor
- Equipment not necessarily at hand

Social-Psychological Factors

- Aesthetic
- Creative
- Concrete
- Group effort Individual effort
- Unstructured
- Unsupervised
- Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Bicycle - $35.00-200.00
Lock - 2.00
Lights - 2.00-6.00
Horn - 1.00-3.00
Mini-bikes - 100.00-360.00

Impairment Limitations

blind	0	balance	0	**hands impaired**:	1	2
low vision	S1	seizures	0	reaching	S2	0
hearing	M1	**aphasia**:		handling	S2	0
speech	+	receptive	+	fingering	S2	0
retardation	+	expressive	+	feeling	S2	0
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	S3	wheel chair	0	bed patient	0
kneeling	S3	semi-ambulant	0	respiratory	0
crouching	S3	Class III heart	0	**Energy Expenditure in**	
crawling	S3	Class IV heart	0	**METS**:	3 - 11

M1 should have a companion along for safety
S1 protected area
S2 depends on type of hand controls
S3 may limit pedaling a bicycle unless under therapeutic prescription

221 Bicycling

DD: 796.6 LC: GV 1041

There has been a renewed enthusiasm for bicycling for health and ecological reasons. Providing there are suitable roads or trails bicycles offer cheap efficient transportation and healthy exercise. Technological improvements have produced the 5 and 10 speed bikes multiplying the effectiveness of muscle power. Were proper routes provided bicycles could be used for short distance intercity travel, substantially reducing the traffic jams and parking problems.

A survey done in 1960 described it as "... almost altogether an activity of youth." "Nine percent of the population reported engaging (in bicycling)..." "Boys are more active cyclists than girls.""Nonwhites cycle more than whites."

"Persons with limiting impairments cycle quite infrequently but those whose impairments are not limiting cycle almost as frequently as those who have no impairments."*

For the year 1970 the State of Wisconsin reported 994 bicycles involved in accidents which resulted in 26 fatalities and 961 injuries.**

Nation wide non-fatal injuries reached about 37,000 in 1967 of which three-quarters occured to children aged 5-14.***

*National Recreation Survey, Outdoor Recreation Resources Review Commission, Govt. Printing Office 1962, ORRRC Study Report 19, Washington, D.C., pp. 11-12.

**Wisconsin Accident Facts 1970, Division of Motor Vehicles, 1971 Edition, Madison, Wisconsin, p. 32.

***Safety Education Data Sheet No. 1 (rev.), National Safety Council, Chicago, 425 N. Michigan, 60611.

221
221 Bicycling, motorcycling, unicycling
221 Motorcycling

DD: 796.75 LC: GV 1060

The marketing of low power, low priced motorcycles has brought this activity within the financial reach of many more people, particularly young people with limited earning power. Motorcycling provides cheap transportation. It is ecologically desireable because motorcycles require less road and parking space, use little fuel and emit limited amounts of undesireable contaminants.

Overall it is a high risk activity although to what extent accidents are caused because motorcycling attracts more risk taking people is unknown. On dry hard surfaced pavement a motorcycle driven conservatively and defensively during daylight hours may not be especially hazardous. Recently enacted state laws requiring that helmets be worn may reduce head injuries.

For the year 1970, the State of Wisconsin reported 1564 motorcycles, motor scooters and motor bikes involved in accidents which resulted in 44 deaths and 1378 injuries. *

Nationally, 1960 persons were killed and about 200,000 injured in motorcycle accidents in 1969. The mileage death rate for motorcycles is about 22 deaths for every 100,000,000 miles traveled as compared with 5.3 for all motor vehicles. Death or injury occurs in 10% of motorcycle accidents. In one study it was found that 70% of those injured had either rented or borrowed a motorcycle; other studies showed that this was the operator's first or second trip.**

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* "Wisconsin Accident Facts 1970," 1971 Edition, Division of Motor Vehicles, Madison, Wis., p. 32.

** "Motorcycles," Safety Education Data Sheet, no. 98 (rev.), Chicago, 425 N. Michigan Avenue 60611.

For further information see:

Wallach, Theresa, Easy Motorcycle Riding. New York: Sterling Publishing Co., 1970.

222 Boating, Sailing, Canoeing

Environmental Factors

Outdoor

Specialized environment
and/or climate

Unlimited space

Equipment a
major factor

Equipment not necessarily
at hand

Social-Psychological Factors

Aesthetic

Creative

Concrete

Group effort | Individual effort

Unstructured

Supervised | Unsupervised

Little opportunity
for recognition

Cost of equipment and supplies: 1972 price range

canoe - $180.00-300.00
fishing boats - 180.00-350.00
Jon boats - 90.00-350.00
fishing motor - 130.00-200.00

Impairment Limitations

blind	M1	balance	M4	**hands impaired:**	1	2
low vision	M2	seizures	0	reaching	S1	0
hearing	+	**aphasia:**		handling	S1	0
speech	+	receptive	+	fingering	S1	0
retardation	+	expressive	+	feeling	+	+
memory	M3	mixed	+	no hands	0	

impaired:					
stooping	S2	wheel chair	M4	bed patient	0
kneeling	+	semi-ambulant	M4	respiratory	+
crouching	S2	Class III heart	S3	**Energy Expenditure in METS:** 1.6-4.0	
crawling	+	Class IV heart	0		

M1 could enjoy activities with companion to run the boat
M2 low speed
M3 should have companion along for safety
M4 should be seated and firmly restrained in position in cabin cruiser or pontoon boat
S1 power boat or as passenger
S2 depends on type and size of craft
S3 medium to large size power boat

222 Boating, sailing, canoeing
222 Sailing

DD: 797.1

There are so many eloquent descriptions of the joys of sailing that we will confine our few words to a more prosaic discussion. Like hiking, bicycling, and canoeing, sailing is ecologically desireable. Depending on wind power, it uses up no irreplaceable fossil fuel, proliferates no pollutants. Sailing craft range from small sailing "fish" which are essentially wood or canvas platforms on hulls or pontoons to ocean racing cruisers.

Although anyone can learn the basic elements in sailing in one afternoon, it is said that no one ever learns all there is to know about sailing.

The nature of sailing decisions requires a hierarchical relationship of authority between skipper and crew. When the skipper says "Duck! We're coming around," this is an order not to be disregarded. Among the experienced, the harshness is mediated by trading off as skipper and crew. Contrary to any land lubber's possible misimpressions, the crew has a lot to do and when things have to be done, they have to be done quickly.

A voyage in rough weather gives an exhilarating feeling of mastering the elements. Whether on land or sea, sailors become highly sensitive to the direction and force of the wind even during the course of their daily round of non-sailing duties.

For further information see:

Blanchard, F.S., The Sailboat Classes of North America. Garden City, New York: Doubleday and Co., 1968.

Harle, P., The Glenans Sailing Manual. Tuckahoe, New York: John de Graff, Inc., 1967.

Pearson, E.A., The Lure of Sailing. New York: Harper and Row, 1965.

222 Canoeing

DD: 797.122   LC: GV 781-785

Canoeing offers an extrememly wide range of possibilities from drifting around on a quiet pond to exciting and hazardous white water canoeing requiring substantial paddling power, skill and experience.

The shape of the canoe in which form follows function is an unending delight. The smaller aluminum canoes are very light and can be comfortably portaged. Canoes of all sizes up to guide canoes can be readily carried on tops of cars which gives them a wide mobility range without the turning and backing problems of boats hauled on trailers.

(cont. on next page)

222 Boating, sailing, canoeing
222 Canoeing (cont.)

The canoe can traverse very narrow and shallow creeks and bayous inaccessible to larger crafts. These waters are often teeming with interesting wildlife and vegetation of all kinds.

In contrast to rowers, canoers have the advantage of looking forward to see what is ahead. Canoes can be paddled noiselessly so that wildlife may be approached more closely than in crafts which noisily announce their arrival. River canoeing includes the excitement of always wondering what is around the next bend: rapids? logs? rocks? bear? deer? turtles? muskrats? heron?

When river canoeing, it is more economical to travel in parties of at least two canoes because using two cars simplifies the arrangements: one car is parked downstream where the trip ends. For river canoeing it is essential to purchase a map, if one has been published, showing the canoeable parts of a river. Since poorly marked back roads are frequently the only means of driving to and from the river, it is well to mark and describe them on a map lest you forget where they were if you do the same trip next year.

For further information see:

Cawley, James and Margaret, Exploring the Little Rivers of New Jersey. Princeton: Princeton University Press, 1942.

Grinnell, L.I., Canoeable Waterways of New York State. New York: Pageant Press, 1956.

Jipson, A.W. and Lowry, G.R., Wisconsin's North Central Canoe Trails. Ladysmith, Wisconsin: North Central Canoe Trails, Inc., c/o Rusk County Information Center, Ladysmith, Wisconsin 54848.

Lowry, G.R., Canoeing the Wild Rivers of Northwestern Wisconsin. Gordon, Wisconsin: Northwest Wisconsin Canoe Trails, Inc., Gordon, Wisconsin 54838.

Malo, J.W., Wilderness Canoeing. New York: MacMillan Company, 1971.

Peekna, Andres, Guide to White Water in the Wisconsin Area. Madison, Wisconsin: Hoofers Outing Club of the University of Wisconsin, 1967.

Roark, Gene, ed., "Wisconsin Water Trails," Publication 104-63, Madison, Wisconsin: Wisconsin Conservation Department.

Urban, J.T., A White Water Handbook for Canoe and Kayak. Boston: Appalachian Mountain Club, 5 Joy Street, Boston, Massachusetts 02108, 1969.

222 Boating, sailing, canoeing

222 Rowing

LC: GV 791-809

Although many types of craft may be rowed in an emergency, as an avocational activity, rowing is ordinarily done in a rowboat or scull in which the rower, sitting in the middle of the boat, propels the boat through the water by pressure on oars on each side of the craft.

The speed attained varies with the size and shape of the craft from sleek hulled scull to foul weather dory. Because of the leverage obtained, greater speeds are possible than in a canoe of similar weight, but the rower usually tires sooner. In rowing there is heavy use of back and leg muscles. The use of leg muscles is increased in a moveable seat scull. The leverage obtained from oars inserted in the water about 4 to 6 feet from the boat and about 10 to 15 feet apart, makes for greater control and stability in high wind and waves than is available in a canoe. The position of the rower is awkward in that he faces backward and must occasionally look around to avoid other boats. The boat may be rowed in a straight line by sighting on two stationary points in a line to the rear of the boat.

For further information see:

The American National Red Cross, Basic Rowing. Washington, D.C., 1964.

222 Power Boating

The advent of boat trailering has greatly changed the availability and scope of power boat activities. Boats of varying size and horsepower are trailered for miles and launched for day trip explorations of unfamiliar lakes and rivers. Opportunities for fishing and water skiing are greatly expanded. The traditional wooden hull has given way to fiberglass and aluminum. Functional style has yielded to the fads and fashions of annual model change shapes and gimmicks following the pattern of the automobile industry. Cabin cruisers contain most of the amenities of the luxury apartment and the cocktail lounge for the ultimate in partying. On the Great Lakes and the oceans the Coast Guard line backs the operation, picking up the ill prepared, the foolhardy and the unlucky.

"Of the 5,427 vessels involved in boating accidents more than half were open motorboats; and in half the cases, the principal cause of the accident was the fault of the operator."*

"In 1968, a total of 1,342 deaths in boating accidents were reported to the U.S. Coast Guard, included in this total were 1,203 drownings and 139 deaths from other causes." Of 1,203 drownings that occured in 1968 as a result of boating accidents, 828 victims either did not have a lifesaving device or failed to use one that was available.*

For further information see:

The American National Red Cross, Basic Outboard Boating. Washington, D.C., 1964.

*National Safety Council, Small Craft, Safety Education Data Sheet No. 28 (rev). Chicago: 425 N. Michigan Avenue, 60611.

223 Flying, gliding, parachuting, ballooning

Environmental Factors

Outdoor

No specific environment

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Creative

Concrete

Group effort   Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	S1	aphasia:		handling	0	0
speech	S1	receptive	S1	fingering	0	0
retardation	0	expressive	S1	feeling	0	0
memory	0	mixed	S1	no hands	0	

impaired:					
stooping	S2	wheel chair	0	bed patient	0
kneeling	S2	semi-ambulant	0	respiratory	0
crouching	S2	Class III heart	0	Energy Expenditure in METS:	3.0-10.0
crawling	S2	Class IV heart	0		

S1 need hearing and speed to operate radio in plane
S2 not parachuting

223 Flying, gliding, parachuting, ballooning

223 Flying

DD: 797.53   LC: TL 721.4 - .8

As of 1970, there were about 117,000 private planes registered in the U.S. and over 600,000 licensed pilots. A student flying license can be obtained at age 16, a private license at age 17. Of individuals learning to fly, about 14% are women and girls. The maximum age for flying is unregulated, but a physical examination and medical certification is required every two years.

Training leading to a private pilot license costs about $600 as of 1970 and there are flight schools associated with many of the airports and flying fields.

Forty hours of flight time, which may take three to five months to complete, is required as a prerequisite to take the practical and written examinations for the private license.

Some planes could be purchased for $1500 as of 1970 but unless you fly over 300 hours per year it is cheaper to rent a plane. Joint ownership of a plane with other pilots reduces the costs.

For further information see:

Delmege, J.W. Jr., Club Flying. New York Modern Aircraft Series, A Division of Sports Car Press, 1966.

Emrish, L., The Complete Book of Sky Sports. London: MacMillan Co., 1970.

Griffin, A., So You'd Like to Buy an Airplane. New York: Mac Millan Co., 1970.

Guerny, G. Lt. Col. and Skiera, J.A. Capt., Private Pilot's Handbook of Weather. Los Angeles: Aero Publishers, 1964.

Pan American Navigation Service, The New Private Pilot (8th ed.). North Hollywood, California, 12021 Ventura Boulevard.

Park, A., Club Flying and Gliding. London: Hennel Locke Limited, 182 High Holborn, 1964.

223 Flying, gliding, parachuting, ballooning

223 Gliding (soaring)

DD: 797.55 LC: TL 605-639

Gliders or sailplanes have no motors and are launched by being towed by powered aircraft or by cars or are launched by catapults. Of these, planes are most commonly used as launchers.

Once aloft, the gliders are dependent upon height and wind currents to remain aloft.

Small size and light weight is an advantage to the pilot. A medical certificate is not required. Obtaining a pilot license takes a minimum of forty flights costing around $500. Planes rent for about $10 an hour and being towed into the air costs between $4-$5. Planes can be built from kits for around $2500; factory-assembled planes cost around $4000.

For further information see:

Allen, R.C.S., Theory of Flight for Glider Pilots (2nd ed.). New York: Barnes and Noble, 1969.

Emrich, L., The Complete Book of Sky Sports. London: MacMillan Co., 1970.

Federal Aviation Agency, Basic Glider Criteria Handbook. Washington D.C.: Supt. of Documents, U.S. Govt. Printing Office, 1961.

Guerny, G. Lt. Col. and Skiera, J.A. Capt., Private Pilot's Handbook of Weather. Los Angeles: Aero Publishers, 1964.

Park, A., Club Flying and Gliding. London: Hennel Locke Limited, 182 High Holborn, 1964.

The Soaring Society of America, Inc., Soaring in America. Los Angeles: P.O. Box 66071, 1959.

Welch, A., Welch, L. and Irving, F.G., The Soaring Pilot (2nd ed.). London: John Murray, Fifty Albemarle St., 1957.

223 Flying, gliding, parachuting, ballooning

223 Ballooning

The balloon is at the mercy of the winds for its horizontal direction although some control of the altitude it maintains is possible through the operation of the burner controls, which determine the amount of hot air supplied to the balloon.

The air that keeps the balloon up is heated by propane heaters and fuel costs are very low. Balloons can be packed into a small space so hanger rental is not required. At 1970 prices, a one-man balloon costs $2000 to $3000, a two man $3,000 to $4 00, and a four-man size $4,500 to $6,000.

No medical examination is required to get a license and a student permit can be obtained at age 15 and a regular license at age 16. A ground crew with a ground vehicle is necessary to drive to pick up the balloon and help secure it when it lands.

For further information see:

Enrich, L., The Complete Book of Sky Sports, London: MacMillan Co., 1970.

Guerny, G., Lt. Col. and Skiera, J.A., Capt., Private Pilot's Handbook of Weather, Los Angeles: Aero Publishers, 1964

223 Gyrocraft

A gyrocraft has no wings and is kept aloft by a freewheeling horizontal rotor blade which is rotated by air pressure. There are four gyrocraft varients. A gyrocopter has a motor and ground landing gear. A gyroglider has ground landing gear but no motor. Ghydrocopter has a motor but instead of wheeled landing gear it has floats for landing on water. A hydroglider has landing floats but no motor.

The powered vehicle is driven forward by a small gasoline motor operated propeller and attains speeds up to 85 mph. The machine holds one person, weighs between 200 and 300 pounds and can be moved around on a samll truck or trailer.

No formal flying training is required but an examination including a medical certificate must be passed to secure a powered vehicle pilot's license. Applicants must be 16 years of age.

The takeoff runway required ranges from 500 to 2,000 feet depending upon the skill of the pilot. As of 1970 a do-it-yourselfer could assemble a powered vehicle for under $1,000.

For further information see:

Enrich, L., The Complete Book of Sky Sports, London: MacMillan Co., 1970

223 Flying, gliding, parachuting, ballooning (cont.)

223 Parachuting

DD: 797.56 LC: TL 750-758

About seven years ago, sport parachutes were developed which could be steered with high accuracy. This made for greatly increased safety in parachute jumping, since the primary danger is not from the parachute failing to open but rather from hazardous landings in unsought places. Ninety per-cent of the injuries are from landing in unexpected places, and about one-third of the deaths in the last 10 years were from drowning. The United States Parachute Association has official safety regulations and parachute jumping is governed by Federal Aviation Administration regulations. These include a qualifying medical examination, an age requirement of 21 years or 16 years with parental consent.

Novice parachutists must make five jumps under the supervision of a certified United States Parachute Association Jumpmaster. The following qualifying certificates and licenses may be earned under the auspices of the United States Parachute Association: First Jump Certificate, Freefall Certificate License, Class A License (Parachutist), Class B License (Intermediate), Class C License (Advanced), and Class D License (Expert).

For further information see:

Emrich, L., The Complete Book of Sky Sports. London: MacMillan Co., 1970.

Guerny, G. Lt.Col., and Skiera, J.A. Capt., Private Pilot's Handbook of Weather. Los Angeles: Aero Publishers, 1964.

Sellick, B., Parachutes and Parachuting. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971.

224 Horseback Riding

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Unstructured

Unsupervised

Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

horse rental - $2.00-6.00 per hour

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M1	seizures	0	reaching	+	+
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	+	expressive	+	feeling	+	0
memory	M2	mixed	+	no hands	0	
impaired:						
stooping	+	wheel chair	0	bed patient	0	
kneeling	+	semi-ambulant	0	respiratory	0	
crouching	+	Class III heart	0	Energy Expenditure in		
crawling	+	Class IV heart	0	METS:	3.0-8.0	

M1 with a companion on the horse
M2 with a companion along

224 Horseback riding

DD: 798.2 LC: SF 277-359

Horseback riding serves varied recreational purposes. Riding may be primarily a means to enjoy the scenery and the feeling of being out-of-doors alone or with friends. Owning a horse may be a vehicle for identifying with and belonging to certain "in" groups, such as the Masonic Horse Patrols, 4-H projects, or various riding and hunt clubs. Each membership is constituted of distinctly different social classes and occupational backgrounds. For some owners or riders, the training and care of the horse is the basic interest. Showing horses of any breed is an absorbing competitive enterprise.

Riding is relatively safe, provided that the neophyte receives basic instruction in controlling his mount, and observes a few safety rules around the barn and on the trail. Twelve weeks of once weekly competent instruction should be sufficient for most people who are only interested in occasional pleasure rides.

There are numerous light horse breeds and breed associations are good sources of information concerning breed standards, lists of breeders, show circuits, and the care, training, and optimal use of each particular type of horse. Equestrian magazines usually contain many informative articles concerning proper riding techniques, show standards, and general information of interest to horsemen.

The dollar investment in horseback riding can range from a basic $2.00 per hour for the pleasure rider who rents a horse (this fee varies regionally), to thousands in horses, equipment, entry fees and professional handling costs in the case of the wealthy dedicated amateur owner who invests in a "string" of show horses.

Physical requirements for riding are moderate. Although riding can be extremely strenous, an individual can set his own pace and expend a small amount of energy if this is more desireable. Only a fair amount of motor coordination is needed for pleasure riding, but a rather high degree of complex coordination is required for riding five-gaited horses. Those with handicaps such as blindness, deafness, and loss of one arm have acquired sufficient skill to be able to show horses successfully. Balance is more important than strength than riding.

A rider should possess a fair amount of self-control and be able to have some sense of how an animal reacts to fearful objects. He should also know how his horse will react to different methods of control: the voice, reins, and the use of body weight and legs. He should be able to keep a cool head in such emergencies as may arise.

"A study of rural recreational accidents in Ohio found that accidents involving horses ranked third as the cause of injuries. Falls from horses accounted for more than two-thirds of the reported riding accidents."*

*Horseback Riding, National Safety Council, Safety Education Data Sheet No. 42 (rev.).

For further information see:

National Safety Council, Saddle Up for Safety! Chicago: 425 N. Michigan Ave. 60611.

225 Physical Fitness Sports

Environmental Factors

Indoor	Outdoor
No specific environment	
Unlimited space	
Requires little or no equipment	Equipment a major factor
Equipment normally at hand	

Social-Psychological Factors

Aesthetic	
Creative	
Concrete	
Individual effort	
Unstructured	
Unsupervised	
Opportunity for recognition	Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Sweatsuit - $5.00-7.00
"Y" membership - 40.00/yearly
Weights - 30.00
Track shoes - 10.00-25.00

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M1	seizures	S1	reaching	+	S1
hearing	+	aphasia:		handling	+	S1
speech	+	receptive	+	fingering	+	S1
retardation	+	expressive	+	feeling	+	S1
memory	+	mixed	+	no hands	S1	

impaired:					
stooping	S2	wheel chair	S3	bed patient	S4
kneeling	S2	semi-ambulant	S3	respiratory	0
crouching	S2	Class III heart	0	Energy Expenditure in	
crawling	S2	Class IV heart	0	METS:	3.2 - 22

M1 jogging and running in a protected area with a companion
S1 jogging, running
S2 some gymnastics, weightlifting at waist level and above
S3 weightlifting
S4 weight lifting for resistive exercises

225 Physical fitness sports, e.g., jogging, running, gymnastics, weight-lifting, etc.

DD: 796.4 LC: GV 481, GV 341, GV 461, GV 511, GV 553, GV 1061

With the exception of relay races and some gymnastics, these activities tend to be carried on individually, sometimes in the company of others. The object may be self development, health maintainence or competition with others. The medical importance of exercise has become increasingly better known, particularly for middle aged persons as a preventitive against cardiovascular disorders.

Jogging is one of the simplest conditioning exercises available. It takes less time than walking. Because it is less strenuous than running it is better suited to younger people not yet fully conditioned for running and for older people. Jogging can be carried on almost anywhere, and no special equipment is required. Although there is a brief awkward period at the beginning when the jogger feels self consciously that every one is looking at him, eventually he learns to jog around town in business clothes when on errands without worrying what people will think.

Running takes less time but more space than jogging. It is probably the most efficient sport for young people to get in the maximum amount of exercise in the least time with the least equipment.

The term gymnastics is used generically to include setting up exercises, or calesthenics as well as the much more technically difficult gymnastic techniques themselves. Setting up exercises or calesthenics, like jogging, are primarily an activity for keeping in good physical condition and there are now specific guidelines by age and sex for scientifically selecting the proper exercises and the proper amount of exercises appropriate to each individual. Eventually the muscles get in tone so that exercise becomes a pleasureable sensation instead of an unpleasant series of aches and pains.

Gymnastics as a technical sport resembles tumbling, ballet, dancing, diving, and parachuting in the quite unique ways in which the body is manipulated through space. The body must be thought of more objectively and as more of an object outside of one's thought in order to control it in the complicated manevers it is required to make. Balance, timing and coordination all receive unusual emphasis.

Weight lifting is the muscle builder par excellence. It is time consuming, usually solitary, but more than almost any other activity, offers the possibility of the individual becoming a much more physically powerful person. Weight lifting is frequently pursued by boys, youths and men in search of an improved self image, a more masculine concept of themselves and a striving for power through physical strength.

For further information see:

Royal Canadian Air Force, 5BX Plan, 3rd ed. Ottawa, Canada, Queen's Printer, RCAF Phamphlet 30/1, 1965.

Administration on Aging, The Fitness Challenge in the Later Years, Washington Administration on Aging, Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare, Washington 20201, AOA Publication No. 802, 1968.

226 Roller Skating

Environmental Factors

- Indoor — Outdoor
- No specific environment
- Unlimited space
- Equipment a major factor
- Equipment not necessarily at hand

Social-Psychological Factors

- Aesthetic
- Pre-patterned
- Concrete
- Group effort — Individual effort
- Unstructured
- Unsupervised
- Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Skates -$ 4.00-40.00

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M1	seizures	0	reaching	+	M2
hearing	+	aphasia:		handling	+	M2
speech	+	receptive	+	fingering	+	M2
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	M2	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	M3
crouching	0	Class III heart	0	Energy Expenditure in	
crawling	0	Class IV heart	0	METS:	5.83

M1 in a protected area with a companion
M2 need companion to help put skates on and take them off
M3 slow pace

226 Roller skating

DD: 796.21 LC: GV 851

Roller skating is an activity pursued primarily by the young. Perhaps this is because they are more resilient, both physically and mentally, than older people seem to be. Younger people don't seem to worry so much about hurting themselves. Nor do they worry about looking silly if they fall. The self-consciousness that so inhibits older people doesn't yet affect them.

One's first attempts at roller skating can be quite frightening. The novice has to get used to moving on a set of 4-wheeled feet, and until he does the ground or floor below seems fearfully hard and threatening. Once an equilibrium is achieved, roller skaters enjoy a new sense of movement, speed and balance.

If finances allow, one can take advantage of indoor rinks and can roller skate all year 'round. Besides providing a controlled environment in which to improve one's skill, roller rinks set the scene for social interplay. The better skater can offer advice and encouragement to the hesitant. The fallen, victims of wayward and undisciplined leg movements, will be assisted to an upright position by helpful passers-by.

The overriding spirit is one of fun and humor. It's difficult not to laugh at the sight of bodies struggling to maintain their balance. It's a comic situation which appeals to the queer sense of humor in all of us. Just as novices find the skating easier as they go along, so too they find that it's not as difficult to laugh at oneself.

Sidewalks are another of the skater's favorite haunts. Sidewalk skaters are a much more spontaneous (and/or much poorer) breed than the roller rink devotees. Sidewalk skating has one major advantage over skating in the rink; whereas the scenery in a rink is severely limited if not to say boringly repititious, the sidewalk skater chooses his own view. The drawback of sidewalk skating is the greater safety hazards.

For further information see:

National Safety Council, Sidewalk Vehicles. Safety Education Data Sheet No. 17, (rev.) Chicago: 425 N. Michigan, Ave., 60611.

227 Water Sports, e.g., swimming, skiing, diving, skin diving

Environmental Factors

Indoor	Outdoor
Specialized environment and/or cilmate	
Unlimited space	
Requires little or no equipment	Equipment a major factor
Equipment not necessarily at hand	

Social-PsycHological Factors

Aesthetic	
Creative	
Concrete	
Group effort	Individual effort
Unstructured	
Supervised	Unsupervised
Opportunity for recognition	Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

men's trunks - $5.00-14.00
women's bathing suits - 10.00-25.00
water skiis - 20.00-50.00
ski belt - 3.00-8.00

wet suit - $50.00-70.00
air tank - 100.00-120.00
fins - 7.00-10.00
mask - 3.00-10.00

Impairment Limitations

blind	M1	balance	M1	hands impaired:	1	2
low vision	M1	seizures	0	reaching	+	0
hearing	+	aphasia:		handling	S1	S1
speech	+	receptive	+	fingering	S1	S1
retardation	+	expressive	+	feeling	S1	S1
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	S2	wheel chair	S2	bed patient	0
kneeling	S2	semi-ambulant	S2	respiratory	0
crouching	S2	Class III heart	0	Energy Expenditure in METS: 5.0-11.0	
crawling	S2	Class IV heart	0		

M1 swimming in a protected area with a companion along for safety
S1 swimming, diving
S2 swimming

227 Water sports, e.g., swimming, skiing, diving, skin diving

227 Swimming

DD: 797.21 LC: GV 837

In contrast to most avocational activities which are optional according to the individual's choice, swimming is an essential activity which should be learned by everyone physically capable of swimming. Not only your own life, but the life of another person may depend on whether or not you know how to swim.

"Swimming is now the second most popular form of outdoor recreation." It will probably be the first by 1980. There is an average of 7,200 drowning deaths in the U.S., the fourth leagest cause of death. About 2,800 of those drowned were swimming or playing in the water.*

* "Swimming," National Safety Council, Safety Education Data Sheet No. 27, Chicago, 425 N. Michigan Ave., 60611.

For further information see:

Anderson, William, Teaching the Physically Handicapped to Swim. London: Faber and Faber, 24 Russell Square, 1968.

Council for National Cooperation in Aquatics and American Association for Health, Physical Education and Recreation, A Practical Guide for Teaching the Mentally Retarded to Swim. Washington, D.C.: American Association for Health, Physical Education and Recreation, 1201 16th St., N.W., Washington 20036, 1969.

Whiting, H.T.A., Teaching the Persistent Non-Swimmer. New York: St. Martin's Press, 1970.

227 Water Skiing

DD: 797.173 LC: GV 840.S5

Water skiing is unusual in that in order to ski at all the skier must first control the skis while the tow boat is pulling the skier to the surface of the water. This is an all or none situation where either the skier can do it or he cannot. It can be socially embarrassing for those who fail many times because the failure is very obvious to all observers. Once up on the surface, it is relatively easy to stay up and to learn the more advanced techniques of steering the skis, riding over waves, etc., as well as the more difficult acts of riding one ski and jumping.

A 10hp motor is needed as a minimum to pull a full grown skier; a 25hp is better. Spills may be dangerous at speeds greater than 40 mph.

For further information see:

Kesting, Ted, ed., The Outdoor Encyclopedia. New York: A.S.Barnes and Co., 1957.

Tyll, Al, The Complete Beginner's Guide to Water Skiing. Garden City, New York: Doubleday and Company, 1970.

(cont. on next page)

227 Water sports (cont.)

227 Diving

DD: 797.24 LC: GV 837

Together with tumbling and parachuting, diving provides the unique sensation of traveling through the air with no contact with ground, water or any other form of support. For many people diving gives a sense of freedom and a feeling of greater control over their body.

227 Skin diving, scuba diving

DD: 797.23 LC: GV 837

The skin diver dives with only a face mask and flippers. With practice, skin divers learn to control their breathing so that they can stay under water for several minutes at a time. During those minutes, the diver can explore the bottom of a river, lake or bay, or he can fish or look for specimens of one sort or another.

"Scuba" is an acronym for "self contained underwater breathing apparatus." The scuba diver carries tanks of air on his back, and consequently can stay under water for relatively long periods of time. Unlike the hard-hat diver, the scuba diver need not be connected to any surface vessel, and he has no cumbersome equipment to restrict his movements. Scuba divers carry out a number of practical and necessary underwater tasks, but the individual who dives for pleasure is most likely to enjoy exploring, fishing, or collecting things like unusual shells or beach glass.

Skin divers and scuba divers have many things in common: they love the water and the freedom of movement they experience in underwater swimming, and they are interested in the creatures who live in the bodies of water in which they dive. Recently, conservation-conscious scuba divers have used their skills to discover the extent and causes of damage done to ecological systems of different bodies of water.

Local establishments offer scuba diving lessons—the usual course is 8 to 12 hours—at reasonable cost. It is necessary to know how to swim before one begins to think about diving.

For further information see:

Dueker, C.W., M.D., Lt. Com., Medical Aspects of Sport Diving. New York: A.S. Barnes and Company, 1970.

Frey, H. and S., Diver Below. London: Collier-MacMillan, 1969.

Hampton, T.A., The Master Diver and Underwater Sportsman. New York: Arco Publishing Company, 1970.

(cont. on next page)

227 Surfing

DD: 797.172 LC: GV 840.88

Surfing has in recent years spread from the Pacific islands to both coasts of the U.S. and become one of the fastest-growing ocean sports. A whole subculture has grown up around surfing, and the tanned, athletic surfer with sun-bleached hair has become a symbol of an affluent generation of American youth.

The chief attraction of surfing is the thrill connected with successfully riding on top of a board which is being carried just below the crest of a wave. The setting in which the surfing takes place is also an attraction for beach lovers, of course.

Surfing demands, as an elementary safety measure, that the would-be surfer be a strong swimmer, capable of swimming considerable distances even at the end of a strenuous day of surfing. The introduction of lightweight boards of synthetic materials, while opening up the sport to women and others of small build, has increased the danger that individuals not in proper physical condition will try their hands at surfing. The surfer needs also to be aware of the danger from uncontrolled boards--his own or others-- when he wipes out (falls from his board).

For further information see:

Bloomfield, J., Know-How in the Surf. Rutland, Vermont: Charles E. Tuttle Co., 1965.

Dixon, P.L., The Complete Book of Surfing. New York: Coward-McCann Inc., 1965.

Klein, H.A. and M.C., Surf's Up. New York: Bobbs-Merrill Co., 1966.

228 Winter Sports, e.g., skiing, skating, sledding, tobogganing, snowmobiling, snowshoeing

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Creative

Concrete

Group effort

Individual effort

Unstructured

Unsupervised

Little opportunity for recognition

Cost of equipment and supplies: 1973 price range

skiis - $40.00-90.00
ski boots - 30.00
sleds - 4.99-17.88
toboggans - 3.66-27.99

poles - $8.00
snowmobiles - 500.00-1000.00
ice skates - 10.00-20.00

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M1	seizures	0	reaching	S1	S1
hearing	+	aphasia:		handling	S1	S1
speech	+	receptive	+	fingering	S1	S1
retardation	+	expressive	+	feeling	S1	S1
memory	+	mixed	+	no hands	S2	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	3.0-20.0
crawling	S3	Class IV heart	0		

M1 snowmobiling as riders; skating in protected areas
S1 skating, snowmobiling, snowshoeing, skiing
S2 skating and snowshoeing with assistance to attach shoes; snowmobiling as riders
S3 snowmobiling

228 Winter sports, e.g., skiing, skating, sledding, tobogganing, snowmobiling, snowshoeing

228 Skiing

DD: 796.93 LC: GV 854

The chief problems with skiing are the travel time required for most people to reach the hills with ski tows and the high cost of the use of tows. This decreases skiing's suitability for older individuals and other individuals with limited vigor who can only participate in vigorous activity for an hour or two.

The increase in the number of tows and the use of artificial snow are likely to increase participation in skiing. So will the four day week, locating more industries in the northern part of the country, and using school buildings year around so that more families will take winter vacations.

228 Ice skating

DD: 796.91 LC: GV 849-851

Because the amount of effort expended in ice skating can range from little to much, it is suitable both for individuals with limited vigor and for those who wish strenuous activity. Older people must take more care to avoid falling. Skating against the wind substantially increases the energy output required.

During the late winter months, because the sun may melt the ice in the middle of the day, better skating is to be found in the morning or the late afternoon or evening. Because of this, good skating is more available for workers on factory shifts than for office workers.

For further information see:

United States Figure Skating Association, Evaluation of Errors in Figures. 30 Huntington Avenue, Boston: U.S. Figure Skating Association, 1959, 5th ed.

Van Der Weyden, Erik, Instructions to Young Skaters. London: Museum Press Limited, 1957.

228 Sledding and tobogganing

DD: 796.95 LC: GV 855

With the increasing number of cars, fewer roads are safe for sledding. Neighborhood action is needed to encourage park commissions to plow park secondary roads and block them off to car traffic so they may be used for safe sledding. Few winter sports hold as much attraction for elementary school age children as sledding.

Tobogganing is one of the best togetherness winter sports for families as a large toboggan holds the family. In contrast to sledding the toboggan travels successfully downhill and across fields. At best the steering capacity of a

(cont. on next page)

228 Sledding and tobogganing (cont.)

toboggan is far inferior to a sled or bobsled. The capacity to steer it depends on the amount of snow. On ice crust any effort to turn it from a straight course may well cause it to spin and spill all the riders.

For further information see:

National Safety Council, "Sidewalk Vehicles," Safety Education Data Sheet No. 17 (rev.), Chicago, 425 No. Michigan Avenue 60611.

228 Snowmobiling

DD: 796.51 LC: GV857.S6T8

Since snowmobiling is sedentary, it is an outdoor activity but without exercise. The long climb back up hill characteristic of sledding and tobogganing is eliminated. Snowmobiling offers extraordinary opportunities to explore back woods areas otherwise accessable only to the most hardy cross country skiers. Scientifically laid out and supervised snowmobile trails in county, state and national parks and forests and trails on private property for which fees are paid may end the current noisy anarchy in the use of the snowmobile.

For the year 1970 the State of Wisconsin reported 67 snowmobiles involved in accidents resulting in 4 fatalities and 46 injuries.*

* "Wisconsin Accidents Facts"1970-1971 Edition, Division of Motor Vehicles, Madison, Wisconsin, p. 32.

For further information see:

Malo, J.W., Snowmobiling. New York: MacMillan Co., 1971.

Tuite, J.J., Snowmobiles and Snowmobiling. New York: Cowles Book Co., 1969,

228 Snowshoeing

DD: 796.92 LC: GV 853

Together with cross country skiing, snowshoeing offers the maximum opportunity for wilderness travel without the noise and speed of the snowmobile. Used locally, every woodlot in winter offers the observer fascinating views of frost covered bushes and trees. Tracks reveal the busy travel of commuting rabbits, and the intermittent tracks of pheasants. In our noisy civilization, few winter activities lead one so readily into areas of quiet and peace.

228 Ice boating

Ice boating requires large areas of cleared ice on lakes or rivers, and consequently is limited to regions with favorable weather for this, which include eastern New York State, including Long Island, New Jersey, the province of Ontario, Michigan, Wisconsin, northern Ohio, Indiana and Illinois.

With a 10 mile wind an iceboat can attain speeds of 35 mph and speeds of up to 144 mph have been recorded in the past.

For further information see:

The Encyclopedia of Sports. New York: A.S. Barnes and Co., 1953.

Kesting, Ted, ed., The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

Smith, S. Calhoun, Ice Boating. Princeton, N. J.: D. Van Nostrand Co., 1962.

230 Individual Competitive Sports

Individual sports always pit the individual against himself, but individual competitive sports allow him to test his skills against the skills of others as well. The competitor tastes the bitterness of defeat and the sweetness of victory as well as the salty taste of sweat.

The individual who is socially unsure of himself but excels in a particular sport can often acquire new poise when he realizes that people respect him and his skills. The sport also gives him something on which he is relatively expert to talk about in a social situation, and competition is an excellent way to meet other individuals with similar interests and skills.

231 Archery

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Archery sets - $13.00-45.00

Impairment Limitations

blind	0	balance	M1	hands impaired:	1	2
low vision	0	seizures	+	reaching	0	0
hearing	+	aphasia:		handling	0	0
speech	+	receptive	+	fingering	0	0
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	+	no hands	0	
impaired:						
stooping	+	wheel chair	+	bed patient	0	
kneeling	+	semi-ambulant	M2	respiratory	0	
crouching	+	Class III heart	0	Energy Expenditure in METS:	4.4 - 6	
crawling	+	Class IV heart	0			

M1 possible if supported
M2 possible if sitting

231 Archery

DD: 799.32 LC: GV 1185

Archery is practiced in nearly every civilization. Originally, of course, archery was a very practical skill; the man who discovered the bow and its uses was a lot more likely to survive an encounter with a vicious animal than was the man who had to tackle the tiger or wolf with a spear or knife.

In time, archers came to be admired for their technical skills as well as for their hunting prowess. Archery, although still used for practical purposes, came to be a sport in the modern sense of the word. Tournaments became common, and the ideal of shooting great distances with great accuracy was developed. Archery is one of the fastest growing sports today.

Archery requires a keen eye and a steady hand. It does not require a great deal of movement from place to place, and might therefore be a suitable activity for the individual whose mobility is impaired but who retains the use of both arms and hands. In archery, the key is skill rather than strength. The sport is as popular among women as men. To achieve proficiency at archery requires patience, concentration, and long hours of practice, but the sport, when engaged in by people who know what they are doing, is aesthetically very pleasing to both the archer and his gallery: there is something delightful about the sight of an arrow winging straight toward its target.

For further information see:

Dintiman, G.B., and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

Kesting, Ted, (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Company, 1957.

National Safety Council, Safety in Archery. Safety Education Data Sheet No. 94, Chicago: 425 N. Michigan Ave., 60611, 1960.

232 Bowling, Lawn Bowling and La Bocce

Environmental Factors

Indoor

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Bowling balls - $20.00-25.00
Bowling alley fees - 0.50-1.50
Bowling shoes - men's - 10.00 - 13.00
women's - 8.00-10.00

Impairment Limitations

blind	0	balance	0	**hands impaired:**	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	**aphasia:**		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	+	expressive	+	feeling	+	0
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	+	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	M1
crouching	0	Class III heart	M1	**Energy Expenditure in METS:**	3 - 6
crawling	+	Class IV heart	0		

M1 at slow pace

232 Bowling, lawn bowling, bocci

232 Bowling

DD: 794.6 LC: GV 903

The familiar game of bowling, or tenpins, came to the United States with the Dutch settlers of New York in the seventeenth century. Now nearly every town in the nation has at least one bowling alley in which individuals and teams of individuals hurl heavy balls down a long wooden deck in an attempt to knock over the wooden pins at the other end of the alley. Serious players usually join leagues which play at specified intervals and competition among teams and individuals is becoming ever more organized.

232 Lawn bowling

DD: 796.31 LC: GV 909

The only relation between the modern forms of tenpins and lawn bowling seems to be that in both games the players throw large balls along the ground. In the game of lawn bowling, or bowls, balls are used which have been manufactured so that when thrown they do not roll in a straight line, but have a desired curve, or bias. Each player throws four balls and tries to get at least one of them nearest the jack. The player may use his balls to knock the balls of his opponent away from the jack or his own balls toward it.

Lawn bowling, as the name implies, is played on a grassy field. The quality of the lawn has a definite effect on the bias of the ball, and players must learn to compensate for different kinds of fields.

Vision corrected to 20/50 is regarded as satisfactory for lawn bowling.

The U.S. National Championship was once won by an amputee with an artificial leg.*

*The American Lawn Bowler's Guide, Maxwell, H.C., Foundation Press, Santa Anna, California (1966), pp. 116-117.

For further information see:

Showers, N.E., Bowling. Pacific Palisades, California: Goodyear Publishing Company, Pacific Palisades 90272, 1969.

Sullivan, G., (ed.), Bowling Secrets of the Pros. Garden City, New York: Doubleday & Company, 1968.

Periodicals: Bowling Magazine
The Bowler's Journal

232

232 Bowling, lawn bowling, la bocci

232 Bocce

DD: 796.31 LC: GV 909

Bocce originated in Italy, allegedly a sport played by the Romans. It was brought to the U.S. in a refined form by the Italians and here it has gained cross-cultural popularity. Many factors account for this popularity. The game is easy to learn, its trappings are kept simple--as long as there are eight balls and a place to roll them, you can play bocce. It's a game attractive to both men and women--in areas of high popularity there are community-sponsored leagues, just like the more universal bowling or baseball community leagues. There are different skills which come to play in bocce. Getting the ball positioned to your advantage may be done in one of four or five different ways. Devotees of the game have their own special style and playing the game gives them a chance to show their stuff. The game tests the skill of your own play and your ability to play against another's skill.

Perhaps the one feature of bocce which most accounts for its popularity is the atmosphere of the game. Unlike many competitive games, where silence is the rule of fair play, bocce players delight in the spirited taunts and badinage that are constantly exchanged during the game. Most often this is possible without causing hard feelings because the players are long-time friends. Devoted fans play bocce as much for the companionship as for the game itself. The love of bocce is so ingrained--most players are brought up with the game--that it is standard fare at picnics and most other family/social gatherings. Occasionally bottles of wine or penny stakes are added to the game to increase incentive.

Bocce sets run at $20. Equipment is durable--lasts as long as none of the set is lost--if the set is plastic and not wood balls.

233 Golf

Environmental Factors	Social-Psychological Factors
Outdoor	Aesthetic
Specialized environment and/or climate	Pre-patterned
Unlimited space	Concrete
Equipment a major factor	Individual effort Group effort
Equipment not necessarily at hand	Structured
	Supervised
	Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Golf clubs - $50.00-200.00
Golf balls - 2.50-3.00/ pkg
Green fees - 1.50-5.00
Golf shoes - 15.00-20.00
Golf cart - 20.00-30.00
Golf bag - 9.00-29.00

Impairment Limitations

blind	O	balance	O	hands impaired:	1	2
low vision	O	seizures	+	reaching	O	O
hearing	+	aphasia:		handling	O	O
speech	+	receptive	+	fingering	+	O
retardation	+	expressive	+	feeling	+	O
memory	+	mixed	+	no hands	O	

impaired:					
stooping	O	wheel chair	O	bed patient	O
kneeling	+	semi-ambulant	O	respiratory	O
crouching	O	Class III heart	O	Energy Expenditure in METS:	5
crawling	+	Class IV heart	O		

233 Golf

DD: 796.352 LC: GV 961-987

The golfer is always playing first against himself. Getting the elusive birdie or eagle and lowering his handicap is the golfer's goal. But, due to the crowded conditions on most public courses, golfers seldom play alone, and competition is considered an intrinsic part of the game.

A great deal of coordination is required to play good golf. The beginning golfer is usually confused and frustrated when his instructor demands that he maintain the proper positions with his hands, arms, feet, legs, and body. It is, after all, the club that hits the ball! But the skilled golfer knows that every part of the body contributes to the smoothness and accuracy of the swing and hence the accuracy of the ball's flight.

Once the sport of the rich, golf is now available to almost anyone. Many municipalities maintain public courses on which one may play for a very slight fee; the disadvantage of these is that so many people have discovered the pleasure of golf that these courses are usually very crowded, and long waits are necessary before it is possible to tee off. That doesn't seem to bother the true afficionados, however; they rise at unholy hours in order to get to the course and secure a place in the waiting line.

The gentle exercise derived from walking around the golf course (carts, of course, provide an alternative for the non-athletic) is generally considered beneficial for almost anyone, and many golfers say that they are to work out their agressive tendencies on the frustrating little white ball.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division Meredith Corp., 1970.

234 Gymnastics, Weightlifting

Environmental Factors

Indoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort   Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Weights - $30.00-50.00
Gym mat - 10.00
Chinning bar - 6.00
Bag and mitts - 20.00

Impairment Limitations

blind	S1	balance	0	hands impaired:	1	2
low vision	+	seizures	0	reaching	0	0
hearing	+	aphasia:		handling	0	0
speech	+	receptive	+	fingering	0	0
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	10 - 26
crawling	0	Class IV heart	0		

S1 can lift weights

234 Gymnastics, weightlifting

DD: 796.4 LC: GV 461-553

Both gymnastics and weightlifting are sports which lend themselves to individual work and self-improvment; both are practiced by people who are concerned about their physical health. For the individual who has attained some proficiency at either sport, however, competition provides a natural outlet for the desire to measure one's own skills against the skills of others.

Gymnastics is offered as an intramural and/or extramural sport at many high schools and colleges for members of both sexes. Gymnastics includes work on various pieces of apparatus (parallel bars, side horse, horizontal bar, trampoline, etc.). Weightlifting is generally more popular among men, and facilities are often available at public and private gymnasia.

Although competitive gymnastics and weightlifting are very strenuous and exacting sports, the handicapped individual or the individual regaining the use of his body after a period of disability might find them both enjoyable and challenging. Since both gymnastics and weightlifting are sports which emphasize individual achievement and individual improvement, it is quite possible to proceed at one's own pace, working steadily if not spectacularly toward a goal.

"During the 1968-1969 school year, more than one-third of all school jurisdiction student accidents reported to the National Safety Council were within the jurisdiction of the gymnasium."*

*Safety in the Gymnasium, National Safety Council, Safety Education Data Sheet Number 22 (rev.), Chicago, 425 N. Michigan Ave., 60611.

234 Tumbling

This sport requires agility, strength, motor coordination, and full use of facilities. It requires little equipment. Individuals may work alone or in pairs or small groups. In any case, stunts are performed usually as parts of routines. Normally there is a short warm-up period of general calisthenics or specific limbering exercises. The roll progression is the most basic and has great practical benefit; learning of certain rolls can save hard bumps on athletic field and in life situations. The inverted balance progression consists of hand and head stands and cartwheels. The companion balance progression is best for exhibition activity and must be performed in pairs with one partner balancing the other. Other routines consist of front and back somersault activities.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

Laporte, William R. and Renner, Al G., The Tumblers' Manual. New York: Prentice-Hall Inc., 1938.

235 Rifle, Pistol, Trap or Skeet Shooting

Environmental Factors

Indoor	Outdoor
No specific environment	
Modicum of space	Unlimited space
Equipment a major factor	
Equipment not necessarily at hand	

Social-Psychological Factors

Aesthetic

Pre - patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Rifles - \$20.00-100.00
Shotguns - 40.00-280.00
Clay pigeons - 3.25/ case
Gun cabinets - 70.00-189.00

Impairment Limitations

blind	0	balance	M1	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	S1
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	+	expressive	+	feeling	+	0
memory	+	mixed	+	no hands	0	
impaired:						
stooping	+	wheel chair	+	bed patient	0	
kneeling	+	semi-ambulant	M1	respiratory	+	
crouching	+	Class III heart	+	Energy Expenditure in METS:	1.9 - 3	
crawling	+	Class IV heart	0			

M1 possible if sitting and/or supported
S1 pistol shooting possible

235 Rifle, pistol, trap or skeet shooting

DD: 799.3 LC: GV 1174-81

Skillful use of firearms to shoot at moving or stationary objects requires good eyesight and the use of at least one hand and arm, but it does not require much physical strength or mobility; rifle, pistol, trap, or skeet shooting would therefore be an excellent activity for the individual who is in some way handicapped to consider.

Most sport shooting of this kind is done on artificial, commercial ranges; stationary targets are sometimes used, but the most common type by far is trap or skeet shooting. In this sport, clay "pigeons" are tossed into the air by a device known as a trap at an angle which is supposed to simulate the flight of real birds. The sportsman's aim, of course, is to fire a shot that will hit the clay pigeon and break it.

Because the targets are inanimate, the sport has none of the negative aspects of hunting; shooting is considered strictly a skill, to be practiced for its own sake with proper emphasis on safty precautions. The sport is easily made competitive on a formal or informal basis. The trap can be set to throw a given number of birds per minute, and scoring then depends on how many clay pigeons are broken by the competitor when they are thrown at a given frequency.

No figures for injuries or fatalities on supervised shooting ranges are available, although the number is thought to be relatively low. However, the Department of Health, Education and Welfare reports that in 1966 the number of accidental deaths due to firearms in the United States was 2,558.*

It is presumed that this sport is unsuitable for depressed people who might develop suicidal tendencies or for paranoid people who might develop homocidal tendencies.

*No Right to Bear Arms, Bakal, Carl, McGraw-Hill, New York (1966), p 354.

For further information see:

Gresham, Grits, The Sportsman and His Family Outdoors. New York: Outdoor Life-E.P. Dutton & Co., 1969.

Kesting, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

Menke, Frank G., Encyclopedia of Sports. New York: A.S. Barnes and Co., 1944.

National Recreation Association, Community Sports and Athletics. New York: A.S. Barnes and Co., 1949.

236 Skating (ice or roller)

Environmental Factors

Indoor Outdoor

Specialized environment and/or climate

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre - patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Roller skates	$14.00-40.00
Ice skates	10.00-20.00
Rink fees	1.00-2.00

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M1	seizures	0	reaching	+	+
hearing	+	aphasia:		handling	M2	M2
speech	+	receptive	+	fingering	M2	M2
retardation	+	expressive	+	feeling	M3	M3
memory	+	mixed	+	no hands	M2	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	10 - 20
crawling	+	Class IV heart	0		

M1 possible in protected area
M2 possible with companion to put on and take off skates
M3 protect hands from frostbite

236 Skating (ice or roller)

DD: 796.91 LC: GV 849, GV 851

Competitive ice or roller skating has two basic forms: speed skating and figure skating. The former is self-explanatory; in the second the emphasis is on graceful movement through a number of set ("school") figures and then a kind of dancing which groups the figures into an original, aesthetically pleasing composition.

Competitive skating requires balance, poise, and stamina. Long hours of hard practice go to make an Olympic skater, but even passably good skating is the result of a lot of work. Competitive skating would probably not be a suitable activity for anyone with a major handicap; minor impairments which did not affect balance or mobility would probably not be a problem for the would-be skater.

Although children still ice skate on ponds and roller skate down sidewalks, competitive skating is done on indoor or outdoor rinks. This is preferable for reasons of safety and because the ice on an ice-skating rink can be kept smooth, and a perfectly smooth level floor can be laid for the roller rink.

237 Swimming and Diving

Environmental Factors

Indoor	Outdoor
Specialized environment and/or climate	
Unlimited space	
Requires little or no equipment	
Equipment not necessarily at hand	

Social-Psychological Factors

Aesthetic	
Creative	
Concrete	
Group effort	Individual effort
Structured	Unstructured
Supervised	Unsupervised
Opportunity for recognition	Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Mens' trunks - $5.00-14.00
Bathing suits - 10.00-25.00

Impairment Limitations

blind	M1	balance	S1	hands impaired:	1	2
low vision	M1	seizures	0	reaching	+	0
hearing	+	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	S1	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	S1	Class III heart	0		
crawling	+	Class IV heart	0		

Energy Expenditure in METS: 10 - 26

M1 in a protected area with supervision
S1 swimming but not diving

237 Swimming and diving

DD: 797.2 LC: GV 837

The emphasis in competitive swimming is almost always on speed. Style is taken into account, but even then the competition is among swimmers employing the same style to see who can swim the fastest and the farthest.

Swimming is such good all-around exercise that the individual who is interested in improving his physical condition is well-advised to swim; competitive swimming is a possibility for anyone who is a good swimmer and wants to benefit from the extra discipline that competition can provide.

For the individual who is already a good swimmer but is not interested in speed swimming, diving is a natural alternative. In diving, especially competitive diving, the emphasis is on form and perfection of movement. Excellence of individual performance is gauged in relation to the performance of others, and the sport is a demanding but rewarding one.

For further information see:

Dintiman, G. B. and Barrow, L. M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp. 197 .

240 Dual Sports

Although all sports are valuable for their physical effects, dual sports have the additional advantage of bringing two people together in an informal social setting.

The sport itself provides the players with a prescribed course of physical action--in itself an aid to overcoming shyness, since it provides "something to do" with the body--and also gives them a variety of natural topics with which to begin a conversation. The situation makes few demands; when the game is over, the players can part with or without making a date for another game, or they can decide to socialize further with each other in another setting.

Most players of dual sports enjoy the sports in and for themselves, and do not worry too much about winning or losing, except from the standpoint of improving their games. People who just can't get worked up over the importance of winning or losing but enjoy playing find dual sports more congenial than team sports. The non-competitive player of a dual sport doesn't have to worry about anyone but himself and his opponent; he doesn't have to feel that he's letting anyone down when he doesn't play to win.

241 Badminton

Environmental Factors

Indoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Outdoor

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Individual effort

Cost of equipment and supplies: 1972 price range

Badminton set - $8.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	
impaired:						
stooping	0	wheel chair	M2	bed patient	0	
kneeling	+	semi-ambulant	0	respiratory	0	
crouching	0	Class III heart	0	Energy Expenditure in METS:	5.83	
crawling	+	Class IV heart	0			

M1 need companion to keep score
M2 use smaller court, companion to retrieve bird

241 Badminton

DD: 796.345 LC: GV 1007

Badminton is played by two or four on a small indoor or outdoor court. The players use small, light rackets to propel a bird, or shuttlecock (originally made by sticking feathers into a cork, now commonly made of plastic) back and forth over a high net. Because the equipment is portable it can be taken along to picnics and other outings if the participants are willing to dispense with a properly lined out court.

Although there are people who take their badminton very seriously, one of the nicer things about the game is that most people don't. Hitting the light bird back and forth is just so pleasant that many people don't want to interrupt the volley by scoring a point. The game is likely to become a cooperative effort to keep the bird aloft.

Badminton is a leisurely game, and conversation between the players is commonly both possible and convenient. Because the bird and rackets are so light, playing well requires a sensitive touch; height and long arms are also advantageous.

For further information see:

Dinitiman, G.B. and Barrow, L. M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp. 1970.

242 Croquet

Environmental Factors

Indoor
Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort
Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

croquet set - $7.29-16.90

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	M1	bed patient	0
kneeling	+	semi-ambulant	M1	respiratory	+
crouching	+	Class III heart	+	Energy Expenditure in METS:	3.0-4.0
crawling	+	Class IV heart	0		

M1 possible but awkward

242 Croquet

DD: 796.354 LC: GV 931

Croquet, a game that may be played by two individuals or two teams, has an aristocratic tradition. Thinking about croquet conjures up an image of a warm summer afternoon: young men in starched shirts and young ladies in long dresses playing languidly on a manicured lawn after a leisurely picnic.

In our more democratic era, the cost of a croquet set is within almost anyone's reach, and the playing field is likely to be someone's back yard. The game is played by striking a wooden ball with a short wooden mallet to propel it first through a series of hoops which are stuck into the ground according to a prescribed pattern, and finally to hit a small post with the ball. There are a number of competitive situations in which one player may strike another's ball with his own and drive it off course.

Croquet is a slow-moving game, the pace of which can be determined wholly by the participants' desire. It is not physically strenuous, and leaves plenty of time and energy for conversations between players. It would be especially suited to the individual who desires or requires some mild exercise but cannot exert himself too much; it is also easily adapted to suit various handicaps.

For further information see:

Miller, D. and Thorp, R., Croquet and How to Play It. London: Faber and Faber, 24 Russell Square, 1966.

Solomon, J.W., Croquet. London: B.T. Batsford Ltd., 1966.

243 Handball, Jai-lai

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

handball - $2.39/two
glove - 7.50/ pair

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	M2	0
hearing	+	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	M3	M3
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in	
crawling	+	Class IV heart	0	METS: 8.0-20.0	

M1 need companion to keep score
M2 play with one hand possible
M3 protect from bruises

243 Handball, jai-lai

243 Handball

DD: 796.31 LC: GV 1017.H2

Handball is a fast, strenuous game played by two people who bounce a ball against the wall of a court and try to return each other's rebounds. It is a game which requires mobility and coordination, and provides excellent exercise. A high-status game, handball is often played by young and middle aged executives in private clubs and gyms.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

243 Handball, Jai-lai

243 Jai-lai

DD: 796.34 LC: GV 1017.P4

"Jai-lai" comes through Spanish from two Basque words meaning "merry festival". The game is played very much like handball, but the players use a long curved wicker basket strapped to the right wrist to make contact with the ball. Jai-lai too is a fast, strenuous game. Jai-lai is particularly popular in areas which have been strongly influenced by Latin culture; it is popular as an exhibition game in Florida.

Both handball and jai-lai are usually considered men's games; neither is popular among women. Both activities would require significant modification to be suitable for handicapped individuals.

244 Paddleball, Tetherball

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

paddle ball rackets - $7.99
tetherball set - 7.95

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	+	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	+	Class III heart	0	Energy Expenditure in METS:	5.83
crawling	0	Class IV heart	0		

M1 need companion to keep score

244 Paddleball, tetherball

244 Paddleball

DD: 796.35 LC: GV 1003

Paddleball is a game played by two people striking a rubber ball with large, short-handled wooden paddles in order to propel it back and forth over a low net. The game is otherwise similar to tennis, but it is generally slower-paced, and thus more suitable for those who are not physically able to participate in the game as strenuous as tennis.

244 Tetherball

DD: 796.32 LC: GV 1017 T

Tetherball uses a volleyball-sized hollow rubber ball suspended from the top of a pole about six feet tall by a light rope. The players use rackets to strike the ball, and each tries, by moving the ball around the pole, to wind the rope around the pole in a different direction. Tetherball is easily adapted to suit the players' needs and the game can be played at whatever pace is desired by the participants.

245 Squash

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

squash rackets - $15.88
ball - 1.25

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	8.0-15.0
crawling	+	Class IV heart	0		

M1 need companion to keep score

245 Squash

DD: 796.343 LC: GV 1004

The game of squash, or more properly, "Squash rackets," was derived from the game "rackets," the difference being that while rackets was played with a leather-covered cloth and twine ball, squash is played with a ball made of India-rubber, and so "squashy."

Squash is played by two individuals or two teams on a four-walled court. Rackets similar to tennis rackets are used to propel the ball against one wall; the ball of course bounces from the first wall to the floor or to other walls. Points are accumulated when one hits the ball in such a way that one's opponent is unable to hit it before it has bounced on the floor more than once.

Squash, which is played by members of both sexes but more popular among men, is a high-status game. In England, where it originated, it was first played among the upper classes, and upon arrival in the United States it was taken up by the fashionable set in this country.

Squash is an action game; once the ball is in play, the participants have no choice but to move rapidly. Casual and serious play will be distinguished primarily by the players' attitudes, and the amount of conversation that goes on between rallies. Although the game requires considerable agility, since the court is fairly small it is not inconceiveable that it could be slightly modified to allow some handicapped individuals to participate; some handicaps might not seriously affect play.

Environmental Factors

Indoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

tennis table - $39.94-47.77
table tennis set - 6.50-8.87

Impairment Limitations

blind	0	balance	M2	**hands impaired:**	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	**aphasia:**		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	
impaired:						
stooping	M3	wheel chair	M3	bed patient	0	
kneeling	+	semi-ambulant	0	respiratory	0	
crouching	M3	Class III heart	0	Energy Expenditure in		
crawling	+	Class IV heart	0	METS:	6.0	

M1 need companion to keep score
M2 could hold on to table
M3 need companion to pick up ball

246 Table Tennis

DD: 796.346 LC: GV 1005

Although table tennis is taken quite seriously as a sport in many countries, in the United States it has generally been relegated to the basement recreation room as a pleasant family pastime.

Even among beginners and the most casual players, table tennis (often called by a trade name, ping-pong)is often a fast-moving, action filled sport. As in most dual sports, the pace of the game can be set by the players, but the speed with which the light little ball bounces around the table is exciting and tends to promote rapid fire play. The game is usually accompanied by a lot of good-natured kidding and a competitive spirit.

Table tennis is played on a large rectangular table about three feet high which has a low net stretched across its middle. Players use small, shorhandled paddles to strike a small hollow plastic or parchment ball back and forth over the net.

Played seriously, table tennis is a strenuous and demanding game, providing a good deal of exercise and excitment. It can, however, be adapted to suit the needs and abilities of the individual players; the important consideration would probably be to pair players of similar enthusiasm and abilities.

For further information see:

Leach, J., Table Tennis For the Seventies. Cranbury, N. J.: A.S. Barnes and Co., 1971.

247 Tennis

Environmental Factors		Social-Psychological Factors	
Indoor	Outdoor	Aesthetic	
No specific environment		Pre-patterned	
Modicum of space		Concrete	
Requires little or no equipment		Group effort	Individual effort
Equipment not necessarily at hand		Structured	
		Supervised	
		Opportunity for recognition	

Cost of equipment and supplies: 1972 price range

tennis racket - $5.00-50.00
tennis balls - 1.00-3.00/three
racket press - 1.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	M2	0
hearing	+	aphasia:		handling	M2	0
speech	+	receptive	+	fingering	M2	0
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	7.1
crawling	+	Class IV heart	0		

M1 need companion to keep score
M2 modify type of serving

247 Tennis

DD: 796.342 LC: GV 990-1005

Tennis is played by people of all ages and many social classes. It is a physically taxing sport, requiring a great deal of running after the ball, and provides good all-around exercise, but it can be played more lackadaisically, as is often done by players in late middle age.

Like golf, tennis is usually strictly segregated by social class; players usually play only with others of the same class. There is a considerable body of tradition and etiquette built around the game of tennis. The casual player may or may not choose to become involved in this, but he should at least familiarize himself with it in order to avoid committing faux pas.

There is tremendous psychological release in whamming the tennis ball as hard as possible, release found also in golf and baseball, but less frequently. Tennis is superior to badminton in this regard because of the heavier equipment. The "kill" in which the ball is slammed very hard into a section of the court from which the opponent cannot possibly return it is a legitimate way to release very aggressive and hostile feelings.

The scoring system used in tennis causes the tension resulting from the uncertainty about who is going to win to last over a longer period of time than it does in most games; once "in deuce" the game may hover for a long period of time over only one point.

Since tennis requires that a certain number of basic skills be acquired before the game can be played at all well, a few lessons from a professional or a talented amateur can be invaluable. Many municipal recreation departments provide tennis lessons at minimal cost.

For further information see:

Dintiman, G.B., and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corporation, 1970.

249 Scoopball

Environmental Factors

Indoor

Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

scoopball sets - $1.97-4.98

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	0	

impaired:					
stooping	M1	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	M1	Class III heart	0	Energy Expenditure in METS:	5.0
crawling	+	Class IV heart	0		

M1 if device or companion to pick up ball when it drops

249 Dual Sports, n.e.c.

DD: 796.3

SCOOPBALL is a skill game requiring two or more players. Each participant receives a deep plastic "scoop", which is used to catch and toss a whiffle ball between the players.

SCOOPBALL is a difficult game to play—even some recreation leaders have difficulty with catching the ball in the narrow scoop, and in directing the aim and distance of the return throw. For this reason, Scoopball can be very frustrating, although children feel a high sense of accomplishment when they succeed in catching the ball unassisted.

The game requires mobility, manual skills and an ability to relate to at least one other person. It is estimated that some individuals with one or more of the following impairments may successfully participate in the activity: audial impairments, cerebral palsy, mental retardation and Perthes Disease. It is useful in providing additional sight, touch and kinesthetic sensory stimulation.

Adaptations: Short distances can be established between participants. A player may use his free hand to aid in catching the ball by "trapping" it in the scoop. This scoop also makes an excellent hand bat for hitting the ball through the air or along the floor.

250 Combative Sports

DD: 796.8 LC: GV 1115-1137

Combative sports are sports which are direct combat, one individual against another. These sports have both mental and physical benefits. First of all, combative sports provide activity which contributes to the mental health of the individual. A well-conducted program in combative sports should provide opportunites for participants to develop courage and initiative, to practice individual action and reaction under emotional stress, to develop emotional control and maturity, and to develop a desirable respect for the emotional feelings of other people. Combative sports provide opportunities for the individual to adjust to his or her individual limitations and capacities. Wrestling and boxing are examples of the few instances in sports where competition between individuals is marked by weight classes and special considerations for the individual physical differences of participants. The smaller individual is not automatically eliminated from the program because of his size, and often learns skills that help to offset his lack of physical power. Combative sports also provide a safe and challenging outlet for the aggressive individual and the natural reaction of the individual resulting from the basic drive for survival. They provide desireable types of activities for people's natural interest in engaging in combative struggle. Because of inherent characteristics as well as environmental factors such as economic and social conditions, some people express themselves in a more aggressive manner; there is a need for physical activity which gives these persons desireable ways of self-expression.

Secondly, combative sports provide physical benefits. They provide program content which contains interesting and challenging activities that develop the body and contribute considerably to the individual's coordination, endurance and his general physical development. Combative sports provide an excellent media for young people and adults to develop basic skills such as balance, timing, coordination, agility, neuro-muscular control, poise, ability to fall safely, and similar skills which contribute vitally to the growth, development and social adjustment of persons in everyday life.

For further information see:

The Recreation Program. The Athletic Institute, Chicago, Illinois, 1963.

251 Arm and Leg Wrestling

Environmental Factors

Indoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	+	balance	0	hands impaired:	1	2
low vision	+	seizures	+	reaching	+	S1
hearing	+	aphasia:		handling	+	SI
speech	+	receptive	+	fingering	+	S1
retardation	+	expressive	+	feeling	+	S1
memory	+	mixed	+	no hands	S1	

impaired:					
stooping	S2	wheel chair	S2	bed patient	0
kneeling	S2	semi-ambulant	0	respiratory	0
crouching	S2	Class III heart	0	Energy Expenditure in METS:	8 - 15
crawling	S2	Class IV heart	0		

S1 leg wrestling only
S2 arm wrestling only

251 Arm and leg wrestling

DD: 796.81 LC: GV 1195

There are several variants of arm wrestling. The opponents may confront each other across a table or along a bar. These are the positions most common to contests between men. With elbows on the table and forearm in a vertical position, each grasps with his right hand the rignt hand of the other (alternatively, both left hands may be used) and attempts to force it down. This is a very intimate contest of strength and will with opponents staring each other in the eye at close range.

Very few competitive or combat situations make it so clear to the opponents and observer who is the victor and who is the vanquished.

In a stand up position of the arm wrestle, opponents face each other and, grasping hands, attempt to upset each other while maintaining their feet in a fixed position. The vanquished who is thrown off balance may be sprawled in a rather undignified position on the floor.

Other forms of the arm wrestle are more suited to boys. In one form, opponents lie on the ground facing each other and as in the table variety grasp hands and attempt to force the opponents arm down.

As an additional alternative, opponents may hold up their left foot with their left hand and joining right hands attempt to force each other off balance.

In leg wrestling the opponents lying on their backs along side of each other, attempt by hooking a leg around the opponent's leg to roll him over. A count is given so both opponents attempt this at the same time.

For further information see:

Donnelly, R., Helms, W., and Mitchell, E., Active Games and Contests. New York: The Ronald Press Co., 1958.

252 Boxing

Environmental Factors		Social-Psychological Factors	
Indoor	Outdoor	Aesthetic	Utilitarian
No specific environment		Pre-patterned	
Modicum of space		Concrete	
Requires little or no equipment		Individual effort	
Equipment not necessarily at hand		Structured	
		Supervised	
		Opportunity for recognition	

Cost of equipment and supplies: 1972 price range

Boxing gloves - $6.00-20.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	+	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	10 - 26
crawling	+	Class IV heart	0		

252 Boxing

DD: 796.83 LC: GV 1115-1141

All sports, by definition, require some form of physical activity and offer some kind of goal to the participant. Some sports go beyond this basic level and offer more satisfying psychological rewards in return for more strenuous effort. Boxing demands such a level of discipline and dedication, and provides such rich rewards in both victory and defeat, that it transcends the limits of sport and verges on the realm of art.

This full commitment is integral to the sport. Boxing is so elemental in form, so basic in its ebb and flow of aggression and defense, that the ill-trained or badly conditioned participant is quickly punished for lack of seriousness. In boxing as in nature, the opponent with the lesser strength and determination suffers a thorough physical defeat.

This is why boxing is so demanding an activity: the two opponents in a match do not merely play a game; they experience an ordeal which, although short in duration, plumbs a man to the depths of his physical and psychological strength. Viewed in this light, boxing loses its aura of bloodlust and maliciousness and assumes its proper stature as a spectacle of human courage, in its grandness and its pathos.

In purely physical terms, boxing surpasses most other athletic activities in its beneficial effects on participants' coordination, agility, stamina, and general vitality. Under proper conditions and with competent supervision, boxing need not pose as serious a threat of injury as is imagined by the uninformed.

Proper supervision is a necessity at all levels of boxing activity, from exercises to actual competition. Supervisors must know the fundamentals of boxing, including stance, footwork, defense, and kinds of punches. Those most liable to injury in boxing are the untrained. Without good coaching, boxing loses its grace and degenerates into a clumsy free-for-all in which danger is increased.

The full commitment demanded by the sport (as mentioned above) means that a person considering taking up the sport must be highly motivated to improve his strength and fundamental skills; he must also be willing to suffer setbacks at first. Confrontation with a much stronger opponent, especially in the early stages of one's experience in the sport, can be enough to discourage all but the most enthusiastic beginners.

253 Fencing

Environmental Factors

Indoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Foils - $10.00-16.00
Mask - 15.00
Chest protector - 8.50 - 18.00
Gloves - 7.00-9.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	0
memory	+	mixed	+	no hands	0	
impaired:						
stooping	0	wheel chair	0	bed patient	0	
kneeling	+	semi-ambulant	0	respiratory	0	
crouching	0	Class III heart	0	Energy Expenditure in METS:	5 - 12	
crawling	+	Class IV heart	0			

253 Fencing

DD: 796.86 LC: U 860-863

The foil, epee, and sabre are the three weapons used in fencing. Of these, men fence with all three, women only with the foil. In foil fencing bouts, scoring can now be done by electrical equipment. Since both the metallic vest and the foil of each fencer is wired, a touch of the foil to the opponent's vest closes an electrical circuit which registers on the electrical scoring box.

Once basic swordplay techniques are learned, success in fencing as in chess and boxing depends in part on outwitting the opponent with feints.

Presumably fencing would be suitable for an individual with one impaired or missing arm who wished to participate in a physically active sport on an equal basis with his opponent.

Organized fencing teams are found in colleges and in private clubs.

For further information see:

Anderson, B., All About Fencing. New York: Arco Publishing Co., 1970.

Curry, N.L., Fencing. Pacific Palisades, California: Goodyear Publishing Co., 1969.

Dintiman, G.B., and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century-Crofts Educational Division, Meredith Corp., 1970.

Slovenko, R., and Knight, J.A., eds., Motivations in Play, Games, and Sports. Springfield, Ill.: Charles C. Thomas, Publisher, 1967.

254 Judo

Environmental Factors

Indoor	Outdoor
No specific environment	
Modicum of space	
Requires little or no equipment	
Equipemnt normally at hand	

Social-Psychological Factors

Aesthetic	Utilitarian
Pre-patterned	
Concrete	
Individual effort	
Structured	
Supervised	
Opportunity for recognition	

Impairment Limitations

blind	0
low vision	0
hearing	+
speech	+
retardation	+
memory	+

balance	0
seizures	0
aphasia:	
receptive	+
expressive	+
mixed	+

hands impaired:	1	2
reaching	0	0
handling	0	0
fingering	+	+
feeling	0	0

no hands 0

impaired:	
stooping	0
kneeling	0
crouching	0
crawling	0

wheel chair	0
semi-ambulant	0
Class III heart	0
Class IV heart	0

bed patient	0
respiratory	0

Energy Expenditure in METS: 8 - 12

254 Judo

DD: 796.8152 LC: GV 475

Form is of great importance in Judo. In contrast to walking or running, Judo requires practice on the form of the activity in preparation for undertaking the activity at all.

This preparation includes learning how to fall, and the adoption of a body posture which lowers the center of gravity. The latter is almost the exact opposite of the officially approved military parade and school physical exercise posture of chest out, shoulders back and stomach in, to which various moral and psychological virtues have been attributed.

The general impact of Judo then is a fundamental change in the use of the body, whether consistently or over periods of time. As in changing attitudes, this requires flexibility and objectivity to analyze what the body has traditionally been doing, to appreciate what it should be doing and to discipline it to perform in the new way. Like learning proper form in golf, diving, or skiing, the new form learned frequently violates what has always felt like "normal" ways of body behavior. New respect for self may emerge from successfully achieving new form in a sport. It promotes a feeling of being in control of oneself and by inference, of being in greater control of the total environment.

A significant lesson from judo which has more general applications, is that of using the opponent's efforts for your own benefit. For example, the opponent's self-initiated forward motion may make it easier to throw him in the direction he is already going. The general application of this principle has application in many life problem areas.

For further information see:

Gleeson, G.R., Anatomy of Judo. New York: A.S. Barnes & Co., 1969.

Smith, Ken, Judo Dictionary. London: F.C. Avis, 26 Gordonbrock Road, 1968.

Tegner, Bruce, Complete Book of Judo Self-Defense. Ventura, Calif.: Thor Publishing Co., P.O. Box 1782, 1968.

255 Karate, Savate

Environmental Factors

Indoor
Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic
Utilitarian

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0
low vision	0
hearing	+
speech	+
retardation	+
memory	+

balance	0
seizures	0
aphasia:	
receptive	+
expressive	+
mixed	+

hands impaired:	1	2
reaching	0	0
handling	0	0
fingering	0	0
feeling	0	0
no hands	0	

impaired:	
stooping	0
kneeling	0
crouching	0
crawling	0

wheel chair	0
semi-ambulant	0
Class III heart	0
Class IV heart	0

bed patient	0
respiratory	0

Energy Expenditure in METS: 8 - 14

255 Karate, savate

DD: 796.8153 LC: GV 476

Form, rhythm, and speed are the essentials in karate and savate; the strength of certain sets of muscles is secondary. Long hours of practice are required to attain proficiency.

There are several different styles of karate and savate. In many, no blows are delivered, even in tournaments. In others, blows are not delivered, but the stroke delivered to block a blow is delivered full force. The combatant in a tournament is judged on his ability to deliver a damaging blow; the blow is considered successful if, in the judge's opinion, the only thing which stopped it was the contender's self-control--i.e., his opponent was unable to block successfully, and in a real-life situation, the blow would have reached its target. Form and speed are also considered, but will not make up for potentially unsuccessful execution.

Experts advise participants that the dexterity of fingers and hands may be reduced if they attempt to harden their hands. Except for pathological stunts, such as breaking boards or bricks, no useful purpose is served by turning the hand into a senseless club.

It is difficult to evaluate the effectiveness of karate and savate as tools for self-defense. In boxing, wrestling, and judo, there is constant practice in rough bodily contact with the opponent; the feel of being hurt and hurting others becomes familiar. The gap between engaging friendly opponents and engaging enemies is lessened, and the emotional control required for successful street fighting is already partly learned.

In some styles of karate and savate, on the other hand, no bodily contact is ever actually made with friendly opponents; in all styles, the emotional control needed to stop a blow just before the moment of impact must be learned. Karate and savate, however, place great emphasis on defensive moves. The well-trained practitioner of karate or savate should be able to automatically respond to any given form of physical attack without even having to plan his moves. There is, however, the danger that he will not be emotionally prepared to deal with a street-fighting situation, however great his technical skill.

For further information see:

Kim, D., and Leland, T.W., Karate and Personal Defense. Dubuque, Iowa: Wm. C. Brown Co., 1971.

Tegner, Bruce, Complete Book of Karate (2nd Ed). Ventura, California: Thor Publishing Co., 1970.

Tegner, Bruce, Judo and Karate Belt Degrees. Hollywood, California: Thor Publishing Co., 1963.

Tegner, Bruce, Kung Fu and Tai Chi: Chinese Karate and Classical Exercises. Ventura, California: Thor Publishing Co., 1968.

256 Wrestling

Environmental Factors

Indoor
Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic
Utilitarian

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	M1	balance	0	hands impaired:	1	2
low vision	M1	seizures	0	reaching	0	0
hearing	+	aphasia:		handling	0	0
speech	+	receptive	+	fingering	0	0
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	10 - 26
crawling	0	Class IV heart	0		

M1 special rules

256 Wrestling (amateur)

DD: 796.812 LC: GV 1195

Wrestling, in contrast to most sports, uses nearly all the muscles in the body rather than a specialized set of muscles. Like running, effort for the most part is continuous and sustained rather than regularly intermittent like tennis or football.

Wrestling is an extreme test of the self. The participant is tested against his opponent within clear view of the audience. The outcome of the combat is entirely dependent upon his own sustained efforts. He cannot depend on fellow teammates as in team sports.

An opponent's efforts may bring about sustained periods of discomfort and pain. If the opponent is stronger and more skillful, relief may be obtained only by giving up; consequently the degree of sheer perseverence that the participant possesses is more clearly revealed to the audience and to himself than in most sports.

Wrestling with no rules would be extremely dangerous and consequently a complex body of rules has been developed which are for the most part strictly adhered to by participants. Most of the rules control must be carried out by the participants themselves because the difference between a legal grip and a dangerous illegal grip which may result in a dislocation or fracture may not be discernible to spectators and may be hidden temporarily from the referee. Loss of emotional control or psychopathic disregard for the opponent's safety can lead to disaster.

From the spectator's point of view, much of the time events move slowly, and because it does not attract large audiences, intrinsic rather than extrinsic satisfactions may be more important to the participants.

Based on matches between professional boxers and professional wrestlers, amateur wrestling is believed to be superior to boxing as a method of self defense in every day life.

For further information see:

Motivations in Play, Games and Sports. Springfield, Illinois: Charles C. Thomas, Publisher, 1967.

Clayton, T., An Introduction to Wrestling. South Brunswick and New York: A. S. Barnes and Co. 1970.

Dintiman, G. B. and Barrow, L. M., A Comprehensive Manual of Physical Education Activities for Men, New York: Appleton-Century Crofts Educational Division Meredith Corp. 1970.

260 Team Sports

Team sports are those sports which may be played with more than two people on a side and which involve the cooperation and united effort of those people so associated in order to achieve the goal of the sport. If the goal of the sport is to win in the competition, this can only be achieved through the united effort of the group.

261 Baseball, Cricket

Environmental Factors

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

gloves - $5.00-15.00
bat - 7.99
ball - 2.00
helmet - 3.00-5.98
shoes - 3.88-9.88

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	M2	0
hearing	+	aphasia:		handling	M2	0
speech	+	receptive	+	fingering	M2	0
retardation	+	expressive	+	feeling	M3	M3
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	1.6-15.0
crawling	+	Class IV heart	0		

M1 needs companion to remind of batting order, score, no. of strikes and balls, etc.
M2 could throw, catch and bat with one hand
M3 protect against bruises

261 Baseball, cricket

261 Baseball

Baseball, although a team sport, is one in which relatively few of the participants are in action at any one time. This increases the tension for the participants associated with the need to perform well both in front of the spectators and more importantly in front of teammates. Between plays there is much inactive time, during which the inept players and the players with inferior feelings must cope with their regrets about striking out last time at bat or fears of muffing the next fly ball. This is in contrast with football, basketball, or hockey, where the press of on-rushing action leaves little time during the game itself for remorse or anticipating trouble.

The derivitive training activities for baseball, playing catch and batting practice, can be meaningful and satisfying activities in their own right, and can be carried on by a minimum of two people and without the need for a complete baseball field.

A more rigid hierarchy of skills is found in baseball than in most team sports with the prestige level of the pitcher role far above that of the outfielder. This is exaggerated in preteen sandlot baseball.

Baseball is one of the few team sports in which there are independent amateur teams, particularly in villages and small towns, which are not associated with schools or churches.

"In the past decade, relatively few fatalities have occurred in baseball, although more than three million persons have participated in the sport..." "The accident incidence in baseball is low compared to other competitive team sports..."*

For further information see:

*National Safety Council, Baseball, Safety Education Data Sheet No. 71, Chicago: 425 North Michigan Avenue, 60611, 1966.

261 Cricket

Played primarily in the British Commonwealth countries, cricket resembles baseball with 11 players on a team and the object to defend a wicket from a ball thrown by the bowler. A wider bat than is used in baseball is provided. The social relationships and relative prestige of the various playing positions follow the same pattern as in baseball.

For further information see:

Dintiman, G.B., and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970

Marylebone Cricket Club, Know the Game! The Laws of Cricket. Yeadon, Great Britain: Educational Productions Limited, 1965.

______________, MCC Guide to Better Cricket. Yeadon, Great Britain: Educational Productions Limited, 1960.

262 Basketball

Environmental Factors

Indoor

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

basketball - $8.00-15.00
goal and net - 10.00
backboard - 20.00-70.00
shoes - 7.00-20.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	M2	0
hearing	+	aphasia:		handling	M2	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	M1	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	M3	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0		
crawling	+	Class IV heart	0		

Energy Expenditure in METS: 14-26

M1 score should be continually posted on score board
M2 can play with one hand, although less effectively
M3 there are regular organized wheel chair basketball games

262 Basketball

DD: 796.323 LC: GV 885-887

"Basketball has become numerically the most popular competitive team sport in the world. In the U.S. there are about three-quarters of a million high school players, including intramurals." It is statistically less hazardous than most other contact sports.*

Basketball is a sport with a dual nature, depending upon the attitude of the participants. Basketball can be a mildly strenuous activity useful in integrating a small group and developing teamwork; it can also be an extremely demanding sport requiring great stamina and development of special motor skills. Basketball can be a friendly game or a fiercely competitive one; the degree of seriousness of the participants makes the difference.

Basketball is a complex, highly regulated game. Few other sports limit the player so severely: basketball not only requires skills unnecessary to other games, but it also prohibits many movements natural to most competitive sports. In basketball the ball must be dribbled according to a highly developed set of rules; it can never be carried. Basketball prohibits physical contact between opposing players and requires a stoppage of play when such contact occurs. These are typical of the special athletic demands basketball makes on the participant.

Basketball, too, requires strategy when played properly. The sport has many elaborate theories, even a published body of knowledge, on tactics. Complex interaction between teammates is necessary for successful play.

The game offers a feeling of accomplishment, due both to the feeling of contributing to a team and to the opportunity afforded by the game for individual finesse. Few other sports have such frequent scoring as basketball; hence the game offers a high degree of positive reinforcement and reward for increased skills on the court.

Basketball need not be undertaken with such a spirit of competitiveness and seriousness. A basketball, hoop, and backboard by themselves, indoors or out, provide opportunity for varied athletic activity. A person by himself can practice shots and "moves" and one can challenge a partner to duplicate a certain shot. Such informal activity calls for less agility and less competitive motivation; as such it is well suited to those with minor disabilities.

*Safety in Sports: BASKETBALL, Safety Education Data Sheet No. 77 (rev.), National Safety Council, Chicago, 425 N. Michigan Ave., 60611.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

Rathbone, Josephine L. and Lucas, Carol, Recreation in Total Rehabilitation. Illinois: 1959.

263 Football, soccer, rugby

Environmental Factors

Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

football - $2.99-7.49
helmet,pants,shoulder guards-10.99-11.94/set
helmet - 6.99
shoes - 4.99
soccer ball - 10.97

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	S1	S1
hearing	M1	aphasia:		handling	S1	S1
speech	+	receptive	M1	fingering	S1	S1
retardation	+	expressive	+	feeling	S1	S1
memory	M1	mixed	M1	no hands	S1	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	10-26
crawling	0	Class IV heart	0		

M1 positions which do not require hearing, understanding or remembering play signals

S1 soccer only

263 Football, soccer, rugby

263 Football

DD: 796.332 LC: GV 937-959

"An estimated 650,000 high school students and 70,000 college students play football." There is an average of 23 deaths per year directly or indirectly the result of football playing. "In no other sport does adequate equipment play such a vital role. The greatest deterrent to accidents and injury in football is using only the best protection."*

Few sports subject the body to more bumps, jars, and bruises, despite the elaborate equipment now worn by players on all organized teams.

Playing football requires one to be tough in the degree of bodily stress, strain and pain sustained. This increases with the level of competition at which it is played, in a hierarchy ranging from pre-adolescent sandlot football through high school, college, and then to the Sunday afternoon TV spectacular, professional football.

The successful football player is a glamour role with top prestige accorded it in high school, college as well as at the professional level. With the rewards go the demands of the role which include an unending succession of strains and bruises, lengthy and sometimes monotonous practices, articulate, exhorting and impatient coaches, the ever present fear of fumbling the ball, and an unceasing pressure to win.

Once the football career is over, attaining equivalent success in an alternate vocational or avocational career may come hard and a sharp status drop may ensue.

* Safety in Sports: FOOTBALL, Safety Education Data Sheet no. 72 (rev.), National Safety Council, Chicago, 425 North Michigan Ave., 60611.

For further information see:

Slovenko and Knight,(eds.), Motivations in Play, Games and Sports. Springfield, Illinois: Charles C. Thomas, Publisher, 1967.

263

263 Football, soccer, rugby

263 Soccer

DD: 796.334 LC: GV 943

In contrast to American football, soccer is an international game. In common with running, hurdling, high jumping and broad jumping, performance springs from the leg muscles. As in dancing, skillful control of the legs is required to master the game. Rather uniquely, handling the ball with hands or arms is not permitted except for the goalie.

Presumably soccer might be suitable for an individual with one, or under unusual circumstances two impaired or missing arm(s) who wish to participate in a physically active sport. Use of the head to butt the ball is one additional technique of the game.

As in lacrosse and field hockey, the continual running requires the players be in top notch physical condition.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

DiClemente, F.F., Soccer Illustrated. New York: Ronald Press Co., 2nd Ed., 1968.

Eastham, G., Soccer Science. Chicago, Illinois: Quadrangle Books, 1966.

Greaves, J., Soccer Techniques and Tactics. London: Pelham Books, 1966.

263 Football, soccer, rugby (cont.)

263 Rugby

DD: 796.333 LC: GV 945

Rugby is primarily a game of the British Commonwealth countries. American football is an offshoot of rugby and there are many similarities. Some of the skills of soccer and speedball are also used. Rugby is a rough-tough body contact sport played without the protective equipment worn in American football.

There are 15 players on a side and no time-outs or substitutions are allowed. Play continues for 70 to 80 minutes each, divided into two halves.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

Jones, J.R., The Encyclopedia of Rugby Football. London: Robert Hale, 2nd. ed., 1966.

Rugby Football Union, Know the Game: Rugby Union Football. London: Revised Edition, 1968.

264 Hockey

Environmental Factors

Indoor
Outdoor

Specialized environment and/or climate

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

hockey stick - $2.99-4.99
hockey puck - 0.38
skates - 10.94-17.94
helmet - 9.95
shoulder pads - 8.95
elbow pads - 4.95
shin pads - 8.95
mouthguard - 2.99

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	M1	0
hearing	+	aphasia:		handling	M1	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in	
crawling	+	Class IV heart	0	METS:	10.0-26.0

M1 can handle stick with one hand, but less effectively

264 Hockey

264 Field hockey

DD: 796.355 LC: GV 1017.H7

Field hockey is the only team sport played exclusively by women. It is one of the most aggressive women's sports, using much football-like jargon and emphasizing one-to-one defense. Yet, to be played well, it requires emotional and physical control by the players; field hockey is a game of precision movements, and fouls are called for even minor infractions of the rules. Field hockey is played in many schools and colleges, but in the U.S. it was introduced first in the Ivy League schools, and is still most frequently played at exclusive girls' schools. It is, consequently, a high-status game, although the equipment needed to play is not especially expensive.

Field hockey is usually played by two teams of 11, but can be played on a slightly smaller field with teams of six players. The size of the teams is one of the major drawbacks of field hockey as an avocational activity, since it takes 12 people to organize even an informal game. Additionally, playing positions are rather highly specialized, so one player cannot really be expected to learn to play more than one position well; it is therefore important that the same group play together regularly as a team. Field hockey combines the fun of an action sport with the "spirit" of a team working together to achieve a goal.

For further information see:

Barnes, Mildred J., Field Hockey. Boston: Allyn and Bacon, 1969.

264 Ice hockey

DD: 796.967 LC: GV 847

Ice hockey, on both the professional and amateur levels, is primarily a man's game. It is a dangerous game, requiring strength and endurance.

Skillful ice skating is to ice hockey what running is to most other fast sports; no one should even consider playing ice hockey unless he is a proficient skater. The game is extremely fast and requires quick reactions; there are few breaks in the game, which is normally played in three twenty-minute periods. Ice hockey players are usually agressive, and sometimes take their agression out physically. Personal fouls are called, but these are small consolation for the player who has been hit with a hockey stick, accidentally or otherwise. Because there are usually no breaks between plays, there is no time for the players to cool down between incidents, and emotions often run hot and heavy.

For further information see:

Orr, Bobby, Orr on Ice. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1970.

May, Dr. Robert H., The Hockey Road. Minneapolis: T.S. Denison and Co., 1969.

Styer, Robert A., The Encyclopedia of Hockey. South Brunswick and New York: A.S. Barnes and Co., London: Thomas Yoseloff Ltd., 1970.

265 La Crosse

Environmental Factors

- Indoor
- No specific environment
- Modicum of space
- Equipment a major factor
- Equipment not necessarily at hand

Social-Psychological Factors

- Aesthetic
- Pre-patterned
- Concrete
- Group effort
- Structured
- Supervised
- Opportunity for recognition

Cost of equipment and supplies: 1972 price range

La Crosse stick $19.00 +
La Crosse ball - 14.00/doz.
Helmit - 15.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	+	aphasia:		handling	0	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0		
crawling	0	Class IV heart	0		

Energy Expenditure in METS: 10 - 26

265 Lacrosse

DD: 796.347   LC: GV 989

Although the National Game of Canada, lacrosse has a relatively small following in the U.S. and is played mainly at a few eastern and midwestern colleges and at the high schools and prep schools which supply them with trained players. This is a rough, body contact sport. While rules permit somewhat less violent body contact than in football, less protective equipment is worn.

As in baseball, all players must be competent in a basic skill. In lacrosse, the basic skill is the ability to both catch and throw a ball using a stick framing a narrow, leather-thonged net. Another basic skill is stick handling, which is the technique of manipulating the stick in such a manner as to retain the ball in the net while wheeling around to evade an opponent.

The unique demands of lacrosse are such that players with different characteristics may be successful. For blocking, the sheer size and strength of the football lineman is desireable. For running, the speed and broken field running ability of a football back is useful. Top conditioning is essential as few games require as much continuous running.

Ability to catch the ball in the stick and to throw it powerfully and accurately, and to stick handle is specific to lacrosse. The player who is skilled at throwing and catching the ball can hold his own against the more powerful or the more rapid runners. Stick handling requires a great deal of practice and most good stick handlers on college teams have developed their skills by playing on high school or prep school teams.

As playing catch is to baseball, so throwing the ball back and forth with lacrosse sticks is to lacrosse, a pleasureable activity in its own right.

College lacrosse teams for women are beginning to be formed as a rival for the traditional field hockey.

For further information see:

Delano, Anne Lee, Lacrosse for Girls and Women. Dubuque, Iowa: Wm. C. Brown Company Publishers, 1970.

Evans, G.H. III and Anderson, R.E., Lacrosse Fundamentals. New York: A.S. Barnes and Co., Inc., 1966.

National Collegiate Athletic Association, The 1971 Official Lacrosse Guide. Phoenix, Ariz: College Athletics Publishing Service, 1971.

266 Polo

Environmental Factors

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	+	aphasia:		handling	0	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	+	no hands	0	
impaired:						
stooping	0	wheel chair	0	bed patient	0	
kneeling	+	semi-ambulant	0	respiratory	0	
crouching	0	Class III heart	0	Energy Expenditure in		
crawling	+	Class IV heart	0	METS: 8 - 16		

266 Polo

DD: 796.353 LC: GV 1011

Polo is a sport widely enjoyed in India, Britain, and increasingly in the United States. However, as a possible avocational activity, it has certain limitations. Polo is an expensive hobby. The riders own their own horses, horses specially bred for polo and consequently very expensive. Only the financially elite could afford to buy, keep and train enough polo ponies to keep up the game. The second drawback is the physical demands made on the player. One needs, besides skill in riding and handling the ponies, skill and stamina in playing the actual game.

The factors of finance and physical condition severely limit the number of people who can actually play the game. However, neither factor seriously limits the number of those who can watch the matches. Attending a match is often free for the going and some of the bigger matches are bound to be televised. For people who love fast moving games or fast moving horses or both, watching polo matches might be enough to provide vicarious thrills and pleasure.

267 Track and field

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

running shoes - $7.00-15.00
sweat pants - 5.00
pole vault - 40.00-50.00
discus - 7.00 -13.00
shot put - 7.00

Impairment Limitations

blind	S1
low vision	S2
hearing	+
speech	+
retardation	+
memory	+

balance	0
seizures	S3
aphasia:	
receptive	+
expressive	+
mixed	+

hands impaired:	1	2
reaching	S4	S4
handling	S4	S4
fingering	S4	S4
feeling	+	+
no hands	0	

impaired:	
stooping	0
kneeling	0
crouching	0
crawling	+

wheel chair	0
semi-ambulant	0
Class III heart	0
Class IV heart	0

bed patient	0
respiratory	0

Energy Expenditure in METS: 10 - 26

S1 discus, shot put, javelin
S2 everything except hurdles
S3 everything except pole vault, high jump, broad jump, hurdles
S4 running and jumping events but not pole vault, discus, shot put and javelin may be propelled with one arm, need to be able to reach if hurdling in case of a fall

267 Track and field

DD: 796.42 LC: GV 1060.5-1099

Compared with other team sports, track and field events attract relatively few spectators and intrinsic are probably greater than extrinsic satisfactions for the participants.

Chances for injury are comparatively limited with the possible exceptions of the hurdles and pole vault. Track and field athletics are among the less hazardous sports.*

Practice and performance is more monotonous as the activity includes concentration on very specialized movements and activities. There are fewer complex rules to learn than in other team sports.

There is relatively little interpersonal interaction and practice is frequently solitary. For much of the practice time the participant is competing against time, height, or distance rather than directly against other human competitors.

The track events require maintaining a continuously high level of physical conditioning. Outstanding performance in some required skill cannot be substituted for it as occasionally happens in other team sports.

*Track and Field Events, National Safety Council, Safety Education Data Sheet No. 89 (rev.), Chicago: 425 N. Michigan Ave., 60611.

For further information see:

Slovenko, R. and Knight, J.A., (eds.), Motivations in Play, Games and Sports. Springfield, Illinois: Charles C. Thomas, 1967.

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

Ecker, Tom, Track and Field Dynamics. Los Altos, Calif., 94022: Tafnews Press, Book Division of Track and Field News, Box 296.

O'Connor, W.H., Motivation and Racing Tactics in Track and Field. West Nyack, New York: Parker Publishing Co., 1970.

Ryan, Dr. Frank, Pole Vault. New York: The Viking Press, 1971.

268 Volleyball

Environmental Factors

Indoor Outdoor

No specific environment

Modicum of space

Requires little or no equipment

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Structured

Supervised

Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Volleyball set - $7.95

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	0	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	10 - 14
crawling	+	Class IV heart	0		

268 Volleyball

DD: 796.325 LC: GV 1017.V6

This is a sport played by 2-18 players, on a court 60 ft. by 30 ft., divided by a net 8 ft. high, using a light, spherical ball approximately 12 oz. in weight. The players on each team are positioned at equivalent intervals on their side of the net so that on a nine man team there are three positioned at the net, three in the rear, and three between the net-men and the rear-men. On a two man team, one man would be at the net and the other in the rear. Only the side serving (initially hitting the ball over the net) scores. Service changes only if the serving side commits an error or a fault, or if the ball touches the net from the servers' hand even if the ball goes over the net. Each time the service changes, the serving side rotates so that each member of the team usually experiences all possible court positions during a game. The first team to reach 15 points wins. At a score of fourteen-all, each side serves alternately until one gains a two point lead. Strategies involve the placement of serves and varying the play from passing to direct return, from lobbing to smashing the ball over the net, and varying the length and direction of the hits. The sport can involve anything from moderate to high activity.

The amount of physical exertion involved in playing the game can be reduced by doing one or all of several things such as reducing the size of the court, increasing the number of players, and lowering the height of the net. This game can be played both indoors and outdoors and could probably be played by those persons forced to function in a wheelchair if adaptations such as those mentioned above were utilized. Presumably one-armed individuals could also function successfully in this game.

Volleyball is one of the most sociable of the team sports. There is a great deal of interaction among participants accompanied by excited emotional involvement. Although great skill, speed, agility and split second teamwork are exhibited by experienced players, it can also be enjoyed by fumbling beginners. It is an excellent co-ed game as physical strength and endurance is of less importance than in most team sports. However, height and long reach are an asset.

For further information see:

Dintiman, G.B. and Barrow, L.M., A Comprehensive Manual of Physical Education Activities for Men. New York: Appleton-Century Crofts Educational Division, Meredith Corp., 1970.

Peck, W. H., Volleyball. London: Collier-MacMillan, 1970.

Trotter, B.J., Volleyball for Girls and Women. New York: Ronald Press, 1965.

271 Automobile Racing

Environmental Factors

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	0	aphasia:		handling	0	0
speech	+	receptive	0	fingering	0	0
retardation	0	expressive	+	feeling	0	0
memory	0	mixed	0	no hands	0	
impaired:						
stooping	0	wheel chair	0	bed patient	0	
kneeling	0	semi-ambulant	0	respiratory	0	
crouching	0	Class III heart	0	Energy Expenditure in METS: 3-8		
crawling	0	Class IV heart	0			

271 Automobile Racing

DD: 796.72-.76 LC: GV 1029

The Sports Car Club of America sets standards for and issues novice permits, regional and national licenses for sports car racers. The applicant is required to join the Sports Car Club of America and the regional Sports Car Club of the region in which he lives. A medical examination is also required.

The applicant must make certain minor modifications on his sports car, use approved racing tires, have the car inspected and wear specified protective equipment.

A novice permit is issued to permit the applicant to attend a driver's school which includes logging six hours of track driving and passing two school sponsored driving events. Before receiving a regional license the novice must then satisfactorily complete two regional events. To receive a national license, the driver must have been in at least four regional events within two calender years, while holding a regional license. The national sport car racer driver's license is held by about 3500 women and men; 2500 others are licensed in their regions.*

Almost 100 road circuits sponsor races about every weekend and there were 339 competition weekends in 1969 sponsored by one national organization.**

Racing, although a dangerous sport, is continually being made safer with improved helmets, shoulder belts, roll bars, fire resistant clothing and built in fire extinguishing equipment.

* Road Racing in America, Engel, L. K., Dodd, Mead & Co., New York (1971), p. 126-9.

**Ibid, p.2

For further information see:

Anderson, Dick, Getting Ready to Race. New York: Sport Car Press, Distributed by Crown Publishers, 1968 2nd ed.

Bradford, L.E., Modern Motor Sport. London: Faber Popular Books, 1964.

Periodicals: Auto Racing, Road & Track, Sports Car Graphic

272 Bicycle and Motorcycle Racing

Environmental Factors

Indoor	Outdoor
No specific environment	
Modicum of space	Unlimited space
Equipment a major factor	
Equipment not necessarily at hand	

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Bicycle - $35.00 - 200.00
Motorcycle - 300.00-2,000.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	0	aphasia:		handling	0	0
speech	+	receptive	0	fingering	0	0
retardation	+	expressive	+	feeling	0	0
memory	+	mixed	0	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	3 - 15
crawling	+	Class IV heart	0		

272 Bicycle and motorcycle racing

272 Bicycle racing

DD: 796.6 LC: GV 1049

Bicycle racing in common with running, high jumping, broad jumping, requires the maximum development of the leg muscles. No other sport permits the attainment of such high speeds through the use of the physical capacity of the body. This is exhilarating feeling and gives a tremendous sense of power over the environment.

Racing in round or oval bowel shaped tracks includes out manuevering opponements for track positions with accidents as a possible result.

272 Motorcycle racing

DD: 796.75 LC: GV 1060

Motorcycle racing is a dangerous sport. The motorcycle because of its speed without the stability of a four wheeled vehicle and without the protection affored by frame and body of a car is precarious to begin with. Racing involves the dangers of jocking for position and exceeding the stability limits of the vehicle on curves.

Participants in motorcycle racing must seek and enjoy danger and have great technical skill in riding the vehicle. The maximum amount of protective padding may lessen injuries incurred in a spill.

For further information see:

Miller, Sammy, Sammy Miller on Trails. Long Beach, California: Parkhurst Publishing Co., 1969.

Redman, J., Wheels of Fortune. London: Stanley Paul & Co., 1966

273 Dog Racing

Environmental Factors

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic Utilitarian

Pre - patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	+	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	0	expressive	+	feeling	+	+
memory	0	mixed	+	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi - ambulant	0	respiratory	+
crouching	0	Class III heart	+	Energy Expenditure in METS:	1.6 - 2
crawling	+	Class IV heart	0		

273 Dog racing

DD: 636.7, 798.8 LC: SF 440

Greyhounds and whippets are racing dogs. Greyhounds are raced on commercial tracks with betting and parimutuel betting systems where legal as in Florida. Dogs race 2 to 4 years and the champions may earn more than $75,000 a year in prize money. There are more than 10,000,000 fans and over half a million is wagered in a year.

The top speed dogs generally cover a distance of 5/16 of a mile in just over 30 seconds. Only half of the racing dogs earn enough prize money to pay the cost of raising them and caring for them. There is a Greyhound Hall of Fame in Abilene, Kansas.

Whippets are described as affectionate and attractive house dogs about 18" high. They are raced but more informally than greyhounds. They may also be used to hunt jack rabbits.

For further information see:

Thompson, W., The Greyhound Racing Record Annual. Miami, Florida: Greyhound Publications, Inc.

Todd, C., The Popular Whippet. New York: Arco Publishing Co., 1961.

274 Foot Racing

Environmental Factors

Outdoor

No specific environment

Unlimited space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	+	seizures	+	reaching	+	+
hearing	+	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	+	

impaired:

stooping	M1	wheel chair	0	bed patient	0
kneeling	M1	semi-ambulant	0	respiratory	0
crouching	M1	Class III heart	0	Energy Expenditure in	
crawling	M1	Class IV heart	0	METS: 15 - 26	

M1 if running is possible with any/or all of these leg impairments

274 Foot racing

DD: 796.426 LC: GV 1061-71

Foot racing may range from the informal spur of the moment races of children to marathon running. Included are jogging and running as described under 225 Physical fitness sports and 267 Track races.

A recent report by Dr. Lawrence A. Golding of Kent State in the May 8, 1972 issue of Sports Illustrated finds track competitors the most physically fit of all athletes.

The marathon distance is 26 miles, 385 yards, and the annual race in Boston is the most famous, with hundreds of starters. Marathons are run in various other parts of the country as well. In the midwest races are scheduled in Toledo and Upton, Wisconsin.

Long distance running is a unique combination of the mind (will) and body. The will to complete the task may give out before the physical resources of the legs and lungs. The will has to resist the impulse to give in to the combined stress of body aches, stiffening legs, blistering feet and burning lungs. The boredom of the long hours of practice required to build up endurance is an additional obstacle. Some anxiety results from the fact that performance is entirely up to the individual. There is no team or equipment which shares the responsibility.

Win or lose there is a tremendous feeling of accomplishment in going the route. It is the pleasure of having brought body and will to a level of maximum performance. A strong camaraderie exists among runners out of mutual respect for each one's efforts.

275 Horse Racing

Environmental Factors

Outdoor

No specific environment

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre - patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

bets - $2.00 minimum

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	0	aphasia:		handling	0	0
speech	+	receptive	0	fingering	0	0
retardation	+	expressive	+	feeling	0	0
memory	0	mixed	0	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	recognition	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	8 - 15
crawling	+	Class IV heart	0		

275 Horse racing

DD: 798.4 LC: SF 277-359

Horse races may be the occasion for appreciation of the horse as a race animal. In America, where its commercial aspects rank higher than the equestrian, it may also be the occasion for appreciation of gambling as a legalized sport. In either dimension, horse enthusiasts participate in horse racing in any of four different ways: as owners, trainers, jockeys, and/or spectators. The owner's contribution is largely financial. The trainer confers with the owner on care and exercise and enjoys a rather high status in the ranks. Under the trainer and the stable jockeys, apprentices to the trade, who put in a full day of intensive work routine. The jockey participates most directly in the race and enjoys the financial benefits. A jockey often can ride three or four races in an afternoon and may receive a large share of the winnings, augmented by private contributions of the owner. The largest class of enthusiasts, the spectators, share in the excitement of the race and, sometimes, the financial benefits. Horse racing is thoroughbred or harness. As a popular sport, and as one in which participation is multi-dimensional, horse racing lends itself to enjoyment by a wide variety of people.

276 Power Boat Racing

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Individual effort

Structured

Supervised

Opportunity for recognition

Impairment Limitations

blind	0
low vision	0
hearing	0
speech	+
retardation	0
memory	0

balance	0
seizures	0
aphasia:	
receptive	0
expressive	+
mixed	0

hands impaired:	1	2
reaching	0	0
handling	0	0
fingering	0	0
feeling	0	0
no hands	0	

impaired:	
stooping	+
kneeling	+
crouching	+
crawling	+

wheel chair	0
semi-ambulant	0
Class III heart	0
Class IV heart	0

bed patient	0
respiratory	0

Energy Expenditure in METS: 3 - 5

276 Power boat racing

DD: 797.14 LC: GV 835

Outboard motor boats in a variety of size and power classes are raced. They may be divided into strictly racing boats and combination racing and cruising boats.

In the racing boats, size and rough water seaworthiness are sacrificed for the maximum in speed so that spills during races may be fairly frequent.

The rough water from the wake of another racer as well as the normal waves on a windy day makes the race outcome somewhat unpredictable.

For those who race informally in cruise boats, safety precautions may include life jackets, helmets, and staying off decks and gunwales.

Jet propelled boats seem to be opening up a new dimension in both racing and cruising.

Just as many sports car owners have turned from speed trials to rallys so predicted logging matches have been developed as an alternative to racing among some boat owners.

In predicted logging, each skipper has to predict how long it will take him to travel between three or more places and victory goes to the one who makes the best guess.

For further information see:

Bowman, H., Outboard Boating Handbook. New York: Arco Publishing Co., 1962.

deFountaine, W., and Barker, B., 1001 Questions Answered About Boats and Boating. New York: Dodd, Mead, and Co., 1966

Goldman, J., Jet Propulsion in Motor-Boating. New York: A. S. Barnes and Co., 1965

Penzer, M., The Motorboatman's Bible. Garden City, New York: Doubleday & Co., 1966.

277 Sailboat and Ice Boat Racing

Environmental Factors

- Outdoor
- Specialized environment and/or climate
- Unlimited space
- Equipment a major factor
- Equipment not necessarily at hand

Social-Psychological Factors

- Aesthetic
- Creative
- Concrete
- Group effort
- Structured
- Supervised
- Opportunity for recognition

Cost of equipment and supplies: 1972 price range

cost of boat - $100.00-5,000.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	0	aphasia:		handling	0	0
speech	+	receptive	0	fingering	0	0
retardation	0	expressive	+	feeling	0	0
memory	0	mixed	0	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	0	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	3 - 10
crawling	0	Class IV heart	0		

277 Sailboat and ice boat racing

DD: 796.97 LC: GV 843, GV 827-832

There are yacht clubs throughout the country. For the most part, boats of similiar design compete against each other which makes for more equal competition. Differences between contenders remain in their care of the finish of the hull, their fine adjustments of the rigging and most importantly the sailing skill of the skipper and the alertness, speed, and precision of the crew.

Races are frequently scheduled for every weekend during the summer in northern climates so that each participant has a chance to prove himself during a series of events, not just a single race.

There are complex principles and rules of sailing to be learned from the books as well as the specific racing rules of the local club. Beyond the science of aerodynamics is the art of applying the science to maneuvering the boat and winning the race.

Although the skill of the skipper is the key variable, victory may hinge on the expertise of the crew as well.

When the boat changes direction in relation to the wind, sails may have to be changed, tied down more loosely or more tightly, the centerboard raised or lowered. The more quickly this is done the faster the boat regains speed and speed wins races.

Typically there are a number of participants in a sailboat race so that for the competitive there is usually the satisfaction of coming ahead of some other boat even if you don't win, unless of course you are so unlucky as to come in last!

With centerboard boats the skipper must estimate the degree of risk he wishes to take to gain greater speed. Heeling the boat over near the point of shipping water utilizes more of the wind's power but increases the risk of capsizing

Whether it is because sailors are prolific writers or writers are prolific sailors there is a super abundance of books about sailing and about racing sailboats.

For further information see:

Blanchard, F. S., The Sailboat Classes of North America. Garden City, New York: Doubleday & Company, 1968.

Harle, P., The Glenans Sailing Manual. Tuckahoe, New York: John de Graff, Inc., 1967.

Pearson, E. A., The Lure of Sailing. New York: Harper & Row, 1965.

278 Winter sports racing, e.g., Bobsledding, Tobogganing, Snowmobiling, etc.

Environmental Factors	Social-Psychological Factors
Outdoor	Aesthetic
Specialized environment and/or climate	Pre-patterned
Unlimited space	Concrete
Equipment a major factor	Individual effort
Equipment not necessarily at hand	Structured
	Supervised
	Opportunity for recognition

Cost of equipment and supplies: 1972 price range

toboggan - $3.66-27.99
snowmobile - 500.00-1,000.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	0	reaching	0	0
hearing	0	aphasia:		handling	0	0
speech	+	receptive	0	fingering	0	0
retardation	0	expressive	+	feeling	0	0
memory	0	mixed	0	no hands	0	
impaired:						
stooping	0	wheel chair	0	bed patient	0	
kneeling	0	semi-ambulant	0	respiratory	0	
crouching	0	Class III heart	0	Energy Expenditure in METS:	3.0-8.0	
crawling	0	Class IV heart	0			

278 Winter sports racing, e.g., bobsledding, tobagganing, snowmobiling, etc.

DD: 796.51 LC: GV 857.56T8

278 Snowmobiling

Snowmobile racing includes closed circuit racing, obstacle or slalom racing, sprint racing, marathon or cross-country racing and powderpuff races. Intercollegiate competition was started in 1968, and now there are some high school rallies. Races are also held in the summer in hayfields and meadows. Factory racing teams test machines and promote products. Track speeds sometimes exceed 70 mph.

The United States Snowmobile Association (USSA), Eagle River, Wisconsin 54521, sponsors races and provides insurance for race competitors.

An International Racers' Federation started in 1970. Information is available from chairman George Sanders, Box 21066, Salt Lake City, Utah 84121. Send self-addressed stamped envelope.

For further information see:

Malo, J.W., Snowmobiling. New York: MacMillan Company, 1971.

Rally Information Sevice of Evinrude Motors, How to Stage a Snowmobile Rally. Evinrude Motors, Division of Outboard Marine Corporation, 4143 North 27th Street, Milwaukee, Wisconsin.

Snowmobile Publications, Inc., The Race and Rally Yearbook. Post Office Box 182, Alexandria, Minnesota 56308.

Environmental Factors

Indoor

Outdoor

Specialized environment and/or climate

Modicum of space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort

Individual effort

Structured

Supervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

roller skates - $4.00-40.00

Impairment Limitations

blind	0	balance	0	hands impaired:	1	2
low vision	0	seizures	S2	reaching	0	0
hearing	S1	aphasia:		handling	0	0
speech	+	receptive	S1	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	S1	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patient	0
kneeling	+	semi-ambulant	0	respiratory	0
crouching	0	Class III heart	0	Energy Expenditure in METS:	3-15
crawling	+	Class IV heart	0		

S1 could do curling and soap box derby
S2 could do curling

291 Curling

DD: 796.96 LC: GV 845

In curling, stones with handles are slid back and forth on ice from one goal to another. The strategy is similar to that of bowling on the green, and the sliding action is similar to shuffle board.

There are four players on each team. Each player throws two stones for a total of sixteen for both teams at one end (round of play).

The player who is throwing the stone (curling) is directed by a partner at the other end of the rink (skip). This relationship is similar to that of pitcher-catcher in a baseball game.

Different from horseshoes, bowling or shuffle board, all players are participating most of the time by sweeping. The ice is swept in front of the stone by the curler's partners to attempt to control the distance the stone will travel. The object of the game is to have your stones closer to the goal than those of your opponents. Part of the strategy consists of knocking the opponent's stones away from the goal.

The game is suitable for both men and women and people of a wide age range. Some players continue well into old age, including a few in the nineties.

For further information see:

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A. S. Barnes & Co., 1957.

Watson, K., Curling. New York: A. S. Barnes & Co., 1950.

Welsh, R., Beginner's Guide to Curling. London: Pelham Books, 1969.

292 Roller Derby

DD: 796.21 LC: GV 851

The actual participants in Roller Derby are better actors than skaters; there is no pretense of art in either role. However, of more interest to us than the skaters are the spectators, in particular, the home fans who absorb themselves weekly in the roller derby spectacle. It is hard to define the audience, but one might hazard a guess that many are not sports fans. They disdain the American phenomenon of avid TV sports watching. They appreciate "Roller Derby" as a parody of TV sports with all its pomp and ritual. Roller Derby enjoys its own ludicrous rituals and displays. It seems hard to imagine that anyone takes it seriously. In this respect it is not unlike Big Time Wrestling. One suspects they share the same audience.

293 Soap box derby

DD: 796.6 LC: GV 1029.7

As American as you know what, the enthusiasm aroused by soap box derbies symbolizes the high status of tinkering with technology at an early age. The purpose is to construct from mainly scrap materials as frictionless a moving vehicle as possible and to race it powered only by gravity.

Winners of local races compete in an annual national contest in Akron, Ohio.

These little racers are ecologically commendable as they neither consume fossil fuel nor pollute the air. All they need are more hills.

300 NATURE ACTIVITIES

310 Passive Enjoyment of Scenery and Wildlife

Environmental Factors		Social-Psychological Factors
Indoor	Outdoor	Aesthetic
No specific environment		Pre-patterned
Modicum of space		Concrete
Requires little or no equipment		Individual effort
Equipment normally at hand		Unstructured
		Unsupervised
		Little opportunity for recognition

Impairment Limitations

blind	S1	balance	+	hands impaired:	1	2
low vision	S1	seizures	+	reaching	+	+
hearing	+	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	+	

impaired:					
stooping	+	wheel chair	+	bed patient	M1
kneeling	+	semi-ambulant	+	respiratory	+
crouching	+	Class III heart	+	Energy Expenditure in METS:	1.6 - 3.2
crawling	+	Class IV heart	+		

S1 can hear, smell and feel some of the stimuli
M1 may be wheeled to view from a window or onto a porch

310 Passive Enjoyment of Scenery and Wildlife

DD: 719 LC: BH 301.N3

Anyone unable to appreciate the beauties and wonders of the world around him would be deprived of what is probably the most universal aesthetic pleasure, the enjoyment of scenery and wildlife. It is important that the severely handicapped person become aware that there is great pleasure to be derived from the passive enjoyment of scenery and wildlife. The inability to go for a solitary walk in the woods does not preclude the enjoyment of the natural world.

Scenery and wildlife can be observed throughout the year from within the home. Birds and small local animals can be attracted if food is put out for them; in time some will become quite tame as they learn that they will be safe with and around certain people. The interested individual can learn to identify various types of birds and animals and to anticipate the visits of migratory birds (see category 324, "Birds or animal observation walks"). Observation generates wonder at the nature of plant growth and change.

Much of the same natural wildlife observed from the window can be observed from a stationary position outside the home. A wider range of scenery will probably be observable, including such things as cloud formations. Being outside will also bring increased awareness and appreciation of climactic changes--warm sun, cool breezes, the stillness of the air or the quality of the atmosphere before a storm.

When removed from the home setting to a park or cottage, the individual has an opportunity to observe new types of natural life, and of course, new scenery. The careful observer will be able to note developmental stages which are simultaneous with or different from those of his home territory, while he acquires new ideas about the general nature of plants and animals. Traveling provides similar opportunities for observation and comparison, while adding the pleasureable sense of getting a more widespread view of the natural world.

Once the enthusiasm for the observation of scenery and wildlife has been aroused, the individual has many resources around him for vicarious enjoyment and for learning more about what he has observed. Television and radio documentaries and travelogues, books, films, and records, lectures, movies and demonstrations can all add to his knowledge and to his thirst for more knowledge about the natural world.

The passive enjoyment of scenery and wildlife is primarily an individual occupation with little opportunity for social interaction. It can be a shared activity, and the severely handicapped person may require some assistance, but it is primarily a solitary pastime. Its chief value would be for the individual whose activity is severely limited and who needs an interest outside himself.

320 Observation, Exploration or Discovery Activities

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Requires little or no equipment

Equipment normally at hand

Social-Psychological Factors

Aesthetic

Pre-patterned

Concrete

Group effort   Individual effort

Unstructured

Unsupervised

Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Binoculars - $15.00 - $60.00
Books (bird, tree or mineral identification) - 0 - $15.00

Impairment Limitations

blind	M1	balance	S1	hands impaired:	1	2
low vision	M2	seizures	S1	reaching	+	+
hearing	M3	aphasia:		handling	+	+
speech	+	receptive	+	fingering	+	+
retardation	+	expressive	+	feeling	+	S4
memory	M4	mixed	+	no hands	+	

impaired:					
stooping	S2	wheel chair	S3	bed patient	0
kneeling	S2	semi-ambulant	S3	respiratory	S3
crouching	S2	Class III heart	S3	Energy Expenditure in METS:	1.5 - 9.0
crawling	S2	Class IV heart	0		

M1	would enjoy walking, hearing, smelling, feeling with a companion-guide, at slow pace
M2	could enjoy observation of large objects; avoid dangerous areas requiring good vision
M3	avoid areas where alertness to sound is important for safety
M4	need companion to avoid getting lost
S1	need companion for safety
S2	all but caves and other dangerous terrain
S3	smooth surfaced level walks
S4	avoid sharp rocks, etc.

320 Observation, Exploration or Discovery Activities

DD: 796.5

The appeal of these activities would be more obvious to those who find a joyful fascination in the variety and splendor of objects in their natural state. The day's "find" might be rocks, shells, wood pieces, or a prolonged study of tiny clams burying themselves at the seaside. Equipment is minimal--containers for the compulsive collector, otherwise just one's eyes and a certain receptiveness. The affinity for this type of activity is usually ingrained, but at times acquired from the example of some other devotee of this quiet repast. As this quiet appreciation is a quality that can be developed, and grows greater when shared, the opportunities for creating bonds quite readily present themselves.

These activities call for no strenuous exertion, no specially developed coordination or muscle skills. The physical demands made are those of walking at whatever pace desired, bending over, picking up relatively light objects. While even these are beyond the capabilities of the bed-ridden, they are not impossible for the wheelchair patient. With minor adjustments, and an agreeable companion, the only-somewhat physically disabled can explore, discover, and collect whatever type of outdoor inhabitant, animate or inanimate, most strikes his fancy. Certainly, unless one experiences a total aversion to the elements, the physical trappings of this outdoor lab should be not only pleasant but healthful.

The range of physical settings caters to a variety of personal preferences and available environments. Some require proximity to very particular settings (322, beachcombing and 327, spelunking); with most others finding the proper environment shouldn't be too difficult.

The activity may be goal-oriented--to find a particular stone or tree, to observe a particular bird, or may thrive on its lack of direction. The activity may be exercised within a structured group (a wide game or a guided nature hike) or at the whim of the individual.

For some the activity goes beyond the realm of avocation and becomes a profession in earnest. Or the activity remains avocational, but is reinforced by research and further education on the subject - the Audibon Society, identification and cataloguing of shells, rocks and semi-precious stones. Even at this level of increased concentration the demands made do not require great physical, intellectual, or technical abilities.

One danger of which the explorer must be aware is poisonous plants. "There are more than 60 varieties of plants in the U.S. which may cause irritation to the skin. Most persons are immune to the effects of the majority of those plants, but nearly every person who touches poison ivy, poison oak, or poison sumac is affected to some degree."*

*Poisonous Plants, National Safety Council, Safety Education Data Sheet No. 8 (revised), National Safety Council, 425 N. Michigan Avenue, Chicago, Illinois, 60611, 1946 (revised 1958).

(cont. on next page)

320 Observation, Exploration or Discovery Activities (cont.)
For further information see:

Elliott, C., The Outdoor Observer. New York: E.P.Dutton and Co., 1969.

Gresham, Grits, The Sportsman and His Family Outdoors. New York: Outdoor Life-E.P. Dutton and Co., 1969.

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

National Safety Council, Hiking and Climbing. Safety Education Data Sheet no.43 (rev.), Chicago, 425 N. Michigan Ave. 60611.

Schoenfeld, Clay, Wisconsin Sideroads to Somewhere. Madison, Wis.: Dombar Education Research Services, Inc., Box 1148 53701.

322 Beachcombing

DD: 796.52 LC: GB 454.B3

Next to the rowdier, livelier seaside activities, beachcombing looks quite pale by comparison. For our purposes, however, its weakness is its strength. Beachcombing calls for no strenuous exertion, no specially developed coordination or muscle skills. The physical demands made are those of walking at whatever pace desired, bending over, and picking up relatively light objects. While even these are beyond the capabilities of the bed-ridden, they are not impossible for the wheelchair patient. With minor adjustments and an agreeable companion, the only-somewhat physically disabled can explore, discover and collect whatever type of beach inhabitant, animate or inanimate, most strikes his fancy. Certainly, unless one experiences a total aversion to sand, sea and air, the physical trappings of this outdoor lab should be not only pleasant but healthful.

330 Gathering of Wild Plant Foods

Environmental Factors

Outdoor

Specialized environment
and/or climate

Unlimited space

Requires little
or no equipment

Equipment normally
at hand

Social-Psychological Factors

Utilitarian	
Pre-patterned	
Concrete	
Group effort	Individual effort
Unstructured	
Unsupervised	
Opportunity for recognition	Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Books on plant identification - $0-15.00

For further information see:

Angier, Bradford, Free for the Eating. Harrisburg, Pa.: Stackpode Books, 1966.

Harris, Ben Charles, Eat the Weeds. Barre, Mass.: Barre Publishers, 1968.

Gibbons, Ewell, Stalking the Wild Asparagus. New York: D. McKay Co., 1962.

Impairment Limitations

				hands impaired:	1	2
blind	0	balance	M2	reaching	+	0
low vision	M1	seizures	M2	handling	+	0
hearing	+	aphasia:		fingering	+	M3
speech	+	receptive	M1	feeling	+	M3
retardation	M1	expressive	+	no hands	0	
memory	M1	mixed	M1			

impaired:					
stooping	M4	wheel chair	0	bed patient	0
kneeling	M4	semi-ambulant	0	respiratory	M5
crouching	M4	Class III heart	M5	Energy Expenditure in METS:	3.2-5
crawling	M4	Class IV heart	0		

M1 needs supervision to avoid poisonous foods.
M2 needs companion for safety.
M3 can probably gather most objects despite these limitations.
M4 with long-handled reachers or collecting waist high or above fruit, nuts, etc..
M5 at slow pace.

330 Gathering Wild Plant Foods

Many of these wild plants are commonly known and easily identified by any initiate. Others require previous instruction or uncommon familiarity with wild plants. The gathering is done because the plants are edible, or medicinal, or spices. For some, identification and collection are motivation enough. The activity may entail battling the native, and at times hostile, elements of fields, bogs, marshes, or woods--for some not a delightful prospect. However, properly clothed, forewarned and prepared adventurers may plunge in and gather to their heart's or stomach's content.

Purists or specialists may seek particular types of wild plants to the exclusion of others. Many wild plants grow only under specific conditions. One might research the local flora and fauna before the expedition gets underway, especially since some shrub of harmless unassuming appearance might well be poisonous.

Given the current ecological orientation and the possible interest generated by the discovery of wild plants, the activity might mushroom into a full scale investigation of the local ecological niche. This might be possible even without prior acquaintance with the formal study of biology.

For further information see:

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

340 Camping

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic	
Creative	Pre-patterned
Concrete	
Group effort	Individual effort
Unstructured	
Supervised	Unsupervised
Little opportunity for recognition	

Cost of equipment and supplies: 1972 price range

Tent - $60-120.00	Portable stoves - $20.00-30.00
Sleeping bags - 8.00-30.00	Cooking utensils - 10.00-20.00

For further information see:

Wells, George and Iris, The Handbook of Wilderness Travel. New York: Harper and Brothers, 1956.

Beard, James, Treasury of Outdoor Cooking. New York: Ridge Press Inc., 1969.

Jones, Edward C., Nelson's Encyclopedia of Camping. New York: Thomas Nelson and Sons, 1963.

Impairment Limitations

blind	M1	balance	+	hands impaired:	1	2
low vision	M1	seizures	+	reaching	+	M1
hearing	+	aphasia:		handling	+	M1
speech	+	receptive	M2	fingering	+	M1
retardation	M2	expressive	+	feeling	+	M1
memory	M2	mixed	M2	no hands	M1	

impaired:					
stooping	M3	wheel chair	M3	bed patient	0
kneeling	M3	semi-ambulant	M4	respiratory	M4
crouching	M3	Class III heart	M4	Energy Expenditure in METS: 1.6-4.4	
crawling	+	Class IV heart	0		

M1 companion to serve as guide and perform tasks necessary
M2 supervision for safety may be necessary
M3 special sleeping arrangements and toilet facilities needed
M4 at a slow pace with competent companions

340 Camping

341 Backyard barbeques, and general outdoor cookery
342 Picnics and special outdoor cooking, e g., clambakes, corn roasts, etc.

The first two categories are chiefly concerned with adaptation to outdoor life. Depending on how daring or resourceful the participants (these most often are group activities), outdoor cooking can summon what little pioneer blood is left in us, or can demonstrate how modern conveniences can eliminate all semblance of struggle with nature. For those who choose the former possibility, the experience is an exercise in working with nature. Testing how well they can overcome the handicap of fewer un-natural aids appeals to those unspoiled by a "ready-made" society. Not everyone cares or is able to see how well they can fare without the accustomed tools. For these, outdoor cooking may serve only to provide a setting, or a change of scene, or a novelty. In this capacity, outdoor cooking accomodates most anyone, despite physical handicap.

For further information see:

Keating. Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

343 Campfire and campfire ceremonial activities

These are often the setting used to bring large groups of people together at a common activity. Groups within the group perform complementary functions: building the fire, presenting skits, singing, supplying and/or cooking food. The warmth and light of the fire seem to appeal to something basic in our natures--they draw everyone close together, away from the dark and the night. Smaller groups appreciate the common bond created by gathering around a fire, strengthening the tightly knit and encouraging the strangers to draw closer--a very effective means of inducing a group consciousness.

344 Camping at public or private campsites

Camping used to be an adventure in pioneering--a co-operation with the forces of nature as a means of survival. Now, however, on any given sweltering summer week-end, a man gathers rations, equipment, family and friends, packs them into an air-conditioned trailer, sporting more conveniences than one finds in the average household, and joins 50,000 other eager Americans in their pilgrimage to the wilds.

However tempting the urge to surround oneself in conveniences might be, the concept of camping is the ability to enjoy oneself in his natural surroundings with only the basic necessities. Properly supervised camping encourages imaginative inventiveness tempered with a proper amount of humor and a definite willingness to go without one's accustomed luxuries. This last factor is important from the standpoint that a person's adaptability to different environments will enable him to be at ease in any situation in which he may find himself.

(cont. on next page)

344 Camping at public or private campsites (cont.)

As a group activity, an enjoyable camping trip depends upon the cooperation among the campers to assure that everyone shares the tasks of setting up and maintaining a campsite. The small comforts gleaned from a community effort will be all the more appreciated because they are not taken for granted and because they are a tangible indication of teamwork.

The physical exertion of camping would perhaps prevent the seriously handicapped from participating because of extreme weather or outstandingly primitive conditions. Sleeping on the ground or limited bathroom facilites might be insurmountable difficulties for severely disabled patients, but for those with slight physical impairments, the average state park or commercial campsite would pose no great problem.

For further information see:

Gresham, Grits, The Sportsman and His Family Outdoors. New York: Outdoor Life-E.P. Dutton and Co., 1969.

345 Extended camping trips, e.g., pack horse or canoe trips

The very adaptable camper, experienced in coping at the level of primitive facilities, might find extended trips of this sort quite to his liking. This category presupposes as well adequate ability in some form of transportation, presumably other than a motor vehicle. Definitely, one's physical condition must be equal to the strenuous task.

For further information see:

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

National Safety Council, Camping. Safety Education Data Sheet, no. 18 (revised), 425 N. Michigan Avenue, Chicago 60611.

National Safety Council, Counselors and Helpers in Summer Camps. Safety Education Data Sheet, no. 80, 425 N. Michigan Avenue, Chicago 60611.

346 Cottage rental in outdoor recreational areas
347 Resort living in outdoor recreational areas
348 Privately owned summer cottages at nearby lakes, etc.

These combine proximity to outdoor settings with the luxury of modern conveniences. These also adapt themselves to either quiet, healthful relaxation or strenuous physical exercise or a combination of both. Most people, then, would find this kind of living well suited to them. More famous and highly developed areas might be more expensive and more tourist-populated than is comfortable. The level of activities while living at the recreational areas may be adapted to suit the individual/group needs. (cf. 320 Observation, Exploration or Discovery Activities, also 200 SPORTS and 500 CRAFT ACTIVITIES.)

For further information see:

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

350 Fishing, Trapping, etc. of Aquatic Animals

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic

Creative

Concrete

Individual effort

Unstructured

Unsupervised

Opportunity for recognition

Utilitarian

Cost of equipment and supplies: 1972 price range

fishing pole and equipment - $7.97-150.00
Wisconsin fishing license - 3.25-5.50

Impairment Limitations

blind	S1	balance	S1	hands impaired:	1	2
low vision	S1	seizures	S2	reaching	+	M1
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	0
retardation	+	expressive	+	feeling	+	+
memory	+	mixed	+	no hands	0	
impaired:						
stooping	S3	wheel chair	S1	bed patient	0	
kneeling	S3	semi-ambulant	S1	respiratory	+	
crouching	S3	Class III heart	S2	Energy Expenditure in METS:	1.6-6.6	
crawling	S3	Class IV heart	0			

S1 dock, bridge, boat or shore fishing with a companion to bail and throw line and aid in catching fish. Blind not required to have fishing license in Wisconsin.
S2 dock, bridge, or shore fishing.
S3 dock, bridge, shore or boat fishing; ice fishing once the hole is broken
M1 with assistance of companion for throwing line

350 Fishing, Trapping etc. of Aquatic Animals

DD: 799, 639.2 LC: SH

Fishing, with the exception of electronic gear for locating shoals of fish, has remained, delightfully, an art rather than a science. One of its charms is the large element of chance or luck which equalizes somewhat the success outcome of the experienced fisherman vs. the novice. That the drama takes place under water and in most cases out of sight adds to the mystery and suspense.

In fishing there is a vast amount of private lore to be learned upon which the fisherman does not have to submit to being tested on objective examinations. He may have the satisfaction of believing that no one else knows as much as he about the terrain at the bottom of his favorite fishing cove and the habits of the fish who dwell there. This is one activity in our culture where the individual is free to be irrational, emotional and unevaluated in his knowledge.

It may be argued that the American work ethic surrounds with suspicion and twinges of guilt anyone caught doing nothing. It is possible that fishing, which overtly appears as doing something, covertly permits the individual to do nothing, as he desires, and still appear respectable to himself and others.

"Preference for fishing (54%) is highest in the 25 to 44 age group. This is true for males, but females in each age group (to 65 and over) prefer swimming and picnicking to fishing." *

"As a general practice males prefer fishing (47%) even over swimming (40%). Females prefer swimming (43%), driving for pleasure (31%), and sightseeing (24%) as well as picnicking (47%) in preference to fishing (21%)."*

The sense of touch is highly developed in fishing and the experienced fisherman develops a keen sense of what's going on at the bottom of the water through the feel of the line. To the sensitive, this opens up a whole new world. He suddenly appreciates the scope of the many things happening under water obscured from usual human observation. The fisherman, through the feel of the line, is partially admitted to an understanding of these happenings.

"Participating in fishing is negatively associated with a preference for such activities as picnicking, walking for pleasure, driving for pleasure, sightseeing, attending outdoor sports and attending outdoor concerts, etc. On the other hand it is positively associated with preference for camping, hunting, boating and water skiing."*

Fishing is a very cruel sport from the standpoint of the fish and the bait. Most fishermen are able to compartmentalize this by assuming that fish and bait have such a primitive neurological system that they feel no pain.

For the fisherman, protection against rain, cold, sun and insects is advisable. Finally, don't forget to get a fishing license!

(cont. on next page)

350 Fishing, Trapping, etc. of Aquatic Animals (cont.)

* National Recreation Survey, Outdoor Recreation Resources Review Commission, Washington, D.C., Gov't. Printing Office, ORRRC Study Report 19, 1962, p.29.

For further information see:

Gresham, Grits, The Sportsman and His Family Outdoors. New York: Outdoor Life, E.P. Dutton and Co., 1969.

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

National Safety Council, Hook and Line Fishing. Safety Education Data Sheet no. 44 (revised), 425 N. Michigan Avenue, Chicago 60611.

Smith, Red, Red Smith on Fishing Around the World. Garden City, New York: Doubleday and Co., 1963.

351 Catching live bait

DD: 799.12 LC: SH 448

Setting minnow traps in a brook usually leads one through delightful terrain. The placid "holes" in the brook are usually teeming with interesting fish, crab, frog and insect life.

Catching minnows spawning under rocks in lakes is a mysterious activity involving placing a weighted net around the rock, feeling under the rock for eggs, then catching the minnow with the bare hands, at the same time hoping to avoid contact with blood suckers and biting crabs.

For further information see:

U.S. Dept. of the Interior, Fish and Wildlife Service, Raising Bait Fishes. Circular 35, Washington, D.C., U.S. Gov't. Printing Office, 1956.

352 Dock, bridge, or shore fishing

DD: 799.12 LC: SH 456

These activities may be enjoyed by the severly disabled, even including individuals confined to wheel chairs, provided they have the intermittent aid of a companion. Precautions for the physically handicapped include access to toilet facilities and adequate clothing protection against rain, cold, sun and insects.

"Persons with no impairments participate in fishing at higher levels than those with impariments, and those whose impairments are limiting participate much less in fishing. This pattern is fairly uniform for each age group. Those with limiting impairments participate at a rate only about half that of the total."*

* National Recreation Survey, Outdoor Recreation Resources Review Commission, Washington, D.C., Gov't. Printing Office, ORRRC Study Report 19, 1962, p. 29.

353 Surf or wader fishing

DD: 799.12 LC: SH 456

Surf or wader fishing can be a vigorous sport if undertow or current is present. Surefootedness and considerable amounts of physical stamina in reserve are safety precautions in the event the fisherman is sucked under or dragged along by the undertow or current. Casting may or may not be physically demanding, depending on the size of the rig used.

354 Boat fishing--fresh water

DD: 639.21, 799.1 LC: SH 401-691. SH 687

This is usually the most efficient and productive kind of fishing as it enables the fisherman to go where the fish are or at least where he thinks they might be. The most comfortable seating arrangements can be provided in a boat. In trolling, there is the rhythmic pleasure of mobility. At anchor in isolated spots there is quiet and solitude.

For further information see:

Janes, E.C., Fresh Water Fishing Complete. New York: Holt, Rinehart, & Winston, 1961.

355 Boat fishing--salt water

DD: 639.22, 799.16 LC: SH457

Salt water fishing involves longer cruises and the possibility of larger and more varied catches. With modern electronic equipment, shoals of fish may be located, reducing some of the luck element in fishing. Larger and more exciting game fish may be caught. Boats, fuel, and gear are all more expensive. Better seamanship than in most fresh water expeditions is required for safety.

(cont. on next page)

355 Boat fishing - salt water (cont.)

For further information see:

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes & Co., 1957.

Scharff, R., Standard Handbook of Salt-Water Fishing. New York: Thomas Y. Crowell Co., 1966.

356 Ice fishing

DD: 799.12 LC: SH 456

Ice fishing requires a hardy tolerance for the cold. If fishing shacks are used, there is some work involved in moving these around and storing them. In the spring, fishermen must be wary of cracks in the ice and being stranded on separated ice floats.

The line may be lowered to a depth of 150 feet. Line bate or cut-up meat or fish are used. Fish are apt to be hungry and bite readily when found. Several lines may be watched by one fisherman by tying the line to a stick which tips up to signal a strike. Jiggling the line up and down serves the double purpose of attracting the fish and keeping the fisherman warm. Lake trout and walleye pike are caught along with perch.

During the winter of 1964, it was estimated that over a million perch, averaging a third of a pound apiece, were taken from a medium-size lake in Wisconsin by ice fishermen.*

* Wisconsin Sideroads to Somewhere, Schoenfeld, Clay, Denbar Education Research Services, Inc., Madison, Wisconsin, Box 1148, 53701.

357 Bow and spear fishing

DD: 799.14 LC: SH 459

Bow and spear fishing, like casting, are more active sports and resemble hunting in this respect. Considerable skills with the use of the weapons is required, which also differentiates it from most of the other fishing techniques.

358 Trapping fish with nets, seines, trotlines, etc.

DD: 799.13 LC: SH 459

These techniques are more frequently associated with commercial fishing. Where fish are plentiful, these tend to yield larger catches than usually can be used by the amateur fisherman and those with whom he could normally share his catch. Considerable strength may be required to haul in these larger catches.

360 Hunting, Trapping, etc., of Terrestrial Animals

Environmental Factors

Outdoor

Specialized environment and/or climate

Unlimited space

Equipment a major factor

Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic Utilitarian

Creative

Concrete

Group effort Individual effort

Unstructured

Unsupervised

Opportunity for recognition

Cost of equipment and supplies: 1972 price range

Rifle - $20.00-100.00
Shotguns - 40.00 -280.00
Gun cabinets - 70.00-189.00
Traps - 6.00-17.00
Bow and arrows - 13.00-45.00

Impairment Limitations

blind	0	balance	0	**hands impaired:**	1	2
low vision	0	seizures	0	reaching	+	+
hearing	M1	**aphasia:**		handling	+	+
speech	+	receptive	M1	fingering	+	0
retardation	S1	expressive	+	feeling	+	+
memory	M1	mixed	M1	no hands	0	

impaired:					
stooping	0	wheel chair	0	bed patients	0
kneeling	0	semi-ambulant	0	respiratory	S1
crouching	0	Class III heart	0	**Energy Expenditure in METS:**	3.2 - 8
crawling	0	Class IV heart	0		

M1 only with a companion along for safety
S1 small game hunting, amphibian, game bird, waterfoul, and varmint hunting, trapping animals

360 Hunting, Trapping, etc. of Terrestrial Animals

DD: 799.0, 639   LC: SK 1-341

Hunting demands a knowledge of the habitat of the game, especially in the cases of deer and duck hunting. Generally, deer are found in wooded areas and ducks tend to be around lakes and marshes. Some hunting requires remaining in a stationary location and may be appropriate for handicapped persons with limited mobility.

10 or 12 gauge shotguns have more impact than 20 gauge guns. Appropriate deer rifles are a 30-30, 30.6 or 30.8 gun. Conservation departments can be contacted for more information. Proper clothing should serve as a protection against wooded or marsh area (wear boots, thick pants) for deer or duck hunting, and more than one-half of the body should be covered with bright red garments.

"Hunting is almost exclusively a male recreation."* Among males, the amount of hunting declines with age. Rural residents hunt more than urban residents. The higher and lower income groups hunt more than the middle income groups. "Limiting impairments apparently restrict hunting, but impairments which are not considered limiting have no effect on hunting." Also, "...in the age group 65 and over, hunting is more frequent among those who rate their health as poor than among those who rate their health as excellent to fair." "Apparently, hunting is an activity in which one may engage at his own rate of speed, and devotees find ways to engage regardless of poor health."*

The Department of Health, Education and Welfare reports that in 1966, the number of accidental deaths due to firearms in the United States was 2,558.**

*National Recreation Survey, Outdoor Recreation Resources Review Commission, Govt. Printing Office, ORRRC Study Report 19, Wash., D.C.,(1962), pp. 36-39.

**No Right to Bear Arms, Bakal, Carl, McGraw-Hill, New York,(1968), pp. 354.

For further information see:

Gresham, Grits, The Sportsman and His Family Outdoors. New York: Outdoor Life-E.P. Dutton and Co., 1969

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes & Co., 1957.

National Safety Council, Hunting Safety. Chicago, 425 N. Michigan Ave., 60611: Firearms, Safety Education Data Sheet No. 3 (rev.).

Sports Afield, Hunting Annual. Sandusky, Ohio: 1972 edition.

(cont. on next page)

360 Hunting, Trapping, (cont.)

360 Bow hunting

Pennsylvania licensed over 128,000 bow hunters in 1968.*** 3,251 deer were taken by archers in Pennsylvania during 1967-68. White tail deer are the more practical game because they inhabit territory with cover which permits the hunter to approach close enough for a hit.

There were 157 arrow-caused mishaps reported in Pennsylvania for the ten-year period 1958-67, and one fatality between 1951-67.****

***Archery, Schuyler, K.C., A.S. Barnes & Co., South Brunswick and New York, (1970), p. 234 and 249.

****Ibid., p. 249.

361 Amphibian or reptile hunting

DD: 639.13-.14 LC: SK 269-283

There are 132 species of snakes in mainland U.S. of which only 19 are poisonous. The 19 are classified under four groups: rattle snakes, copperheads, water moccasins and coral snakes. From 1950 through 1960 138 persons were reported as having died of snake bite and of these nearly 80% were from rattle snake bites.*

Because the northern banded water snake eats game fish one author favors hunting it along with poisonous snakes. Most non poisonous snakes are ecologically helpful in controlling the population of mice, rats, moles and insects.

Because they are slender, snakes are difficult to shoot with bow and arrows at a distance of over three yards.**

* Poisonous Snakes, National Safety Council, Safety Education Data Sheet No. 35 (rev.), Chicago, 425 N. Michigan Ave., 60611.

**Archery, Schuyler, K.C., A.S. Barnes and Co., South Brunswick and New York, (1970), pp. 45-461.

362 Game bird hunting

DD: 639.12, 799.24 LC: SK 311-329

Game birds include quail, doves, rails, woodcock, snipe, ruffled grouse, chukars, ptarmigan, huns, spruce grouse, sage, sharptailed and blue grouse, prairie chickens,pheasants and turkeys plus waterfowl which are described in another section.

For further information see:

Harbour, D., Modern ABC's of Bird Hunting. Harrisburg, Pennsylvania: Stackpole Co., 1966.

363 Waterfowl hunting

DD: 639.124 LC: SK 331-335

Hiking through marshes is hard work. For safety, it is desireable to have a companion along. Retriever dogs increase the number of hit birds which can be recovered.

Specialized knowledge required is how to set out decoys, make duck blinds, and select the right size shot for the bird being hunted and the distance the shot will have to travel.

Waterfowl include ducks and geese.

For further information see:

Becker, A.C. Jr., Waterfowl in the Marshes. South Brunswick and New York: A.S. Barnes and Co., 1968.

364 Small game hunting

DD: 799.25 LC: SK 284-291

Small game includes rabbits, squirrels, wild turkeys, quail, pheasants, prairie chickens, fox, raccoon, opossum, skunk, muskrat, woodcock, dove and bobcat.

Most would-be hunters start hunting small game such as rabbits and squirrels and varmints such as rats and woodchucks because they are conveniently at hand.

For further information see:

Anderson, L.A., Hunting the American Game Field. New York: Ziff-Davis Publishing Company, 1949.

Helmericks, C., Hunting in North America. Harrisburg, Pa.: The Stackpole Company, 1956.

Robinson, B.C., Woodland, Field and Waterfowl Hunting. Philadelphia: David McKay Company, 1946.

365 Varmint hunting

DD: 799.25 LC: SK 341

Varmints may be described as nuisance animals that are hunted to get rid of them, as they are not valuable for food, fur, feathers, trophy horns or teeth. However, the definition of what is a varmint varies from one part of the country to another. The following are usually defined as varmints: rats, crows, coyotes, prairie dogs. Varmints can usually be hunted the year around.

For further information see:

Schuyler, K.C., Archery. South Brunswick and New York: A.S. Barnes and Company, 1970.

366 Trapping animals

DD: 639.1 LC: SK 282-283

Trapping includes the pleasure of the out-of-doors, the excitement of Sherlock Holmes-type observation and interpretation of clues, the satisfaction of collecting a fascinating exhibit of animal furs, and a part time money-making activity.

Louisiana is the largest producer of furs. There are many relatively small wilderness areas left in the U.S., although the largest stretches are in Northern and Western Canada and in Alaska.

There are wild areas even near large cities where small fur bearing mammals abound. Rural non-farm land may be improved to increase the population of animals worth trapping by building ponds, planting suitable food and cover crops and not overtrapping. Fur bearing animals worth trapping are badger, beaver, civet cat, coyote, ermine, fisher, fox, lynx, marten, mink, muskrat, opossum, otter, raccoon, skunk, wild cat, and wolf.

The lore of trapping is learned primarily by experience, although some basic diagrams of how and where to set traps can be found in books.

Bounties are offered for some animals.

Precautions: Governmental regulations prohibit trapping of some species or limit open seasons for trapping. The permission of land owners should be secured before trapping on anyone else's property. Particularly near cities, care should be taken lest traps endanger humans or domestic animals.

Skinning the animals and cleaning and drying the pelts is a more humdrum, time-consuming and less pleasant task than trapping. Nevertheless it must be done carefully and thoroughly if attractive pelts are desired. Trapping inflicts longer suffering on the animals than does hunting, with the exceptinn of underwater traps where death by drowning occurs more rapidly.

For further information see:

Keating, Ted (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Company, 1957.

McCracken, H. and Van Cleve H., Trapping. New York: A.S. Barnes and Company, 1947.

367 Big game hunting in the U.S.

DD: 799.27 LC: SK 295-305

Big game hunting requires the time and money to travel where the game is located and excellent physical condition Also needed is shooting skill and prior experience in hunting and wilderness lore, and coolness and resourcefulness in the face of danger. Big game include whitetail and mule deer, black bear, grizzly bears, Alaskan brown bears and polar bears, moose, elk, caribou, mountain sheep and goats, pronghorn antelope, cougar, jaguar, bison, and buffalo, walrus, wild pig (javelina, peccary), and wolves. With the exception of deer and black bear, most are found in the West and in Alaska.

For further information see:

Helmericks, C., Hunting in North America. Harrisburg, Pa.: The Stackpole Company, 1956.

Keith, E., Hunting Big Game. Los Angeles: Petersen Publishing Company, 1965.

Pope, S., Hunting with the Bow and Arrow. New York: G.P.Putnam's Sons, 1947.

368 Big game hunting in foreign countries

DD: 799.271 - .279 LC: SK 295-365

To go abroad to hunt is expensive and requires superior shooting skill and extensive prior hunting experience. Those who are ready for this will undoubtedly have acquired substantial information about it from fellow hunters.

For further information see:

Crow, P.K., Sporting Journeys. Barre, Massachusetts; Barre Publishers, 1966.

Klineburger, B. and Hurst, V.W., Big Game Hunting Around the World. Jericho, New York: Exposition Press, Inc., 1969.

Hibben, F.C., Hunting in Africa. New York: Hill and Wang, 1962.

370 Raising, Caring for and Breeding of Plants

Environmental Factors

Indoor	Outdoor
Specialized environment and/or climate	
Modicum of space	Unlimited space
Requires little or no equipment	Equipment a major factor
Equipment normally at hand	Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic	Utilitarian
Creative	
Concrete	
Individual effort	
Unstructured	
Unsupervised	
Opportunity for recognition	Little opportunity for recognition

Impairment Limitations

blind	M1, S1
low vision	M1
hearing	+
speech	+
retardation	+
memory	+

balance	S2
seizures	M1
aphasia:	
receptive	+
expressive	+
mixed	+

hands impaired:	1	2
reaching	+	S3
handling	+	0
fingering	+	0
feeling	+	+
no hands	0	

impaired:	
stooping	S2
kneeling	S2
crouching	S2
crawling	S2

wheel chair	S2
semi-ambulant	S2
Class III heart	+
Class IV heart	0

bed patient	S3
respiratory	M2
Energy Expenditure in METS:	2 - 8

M1 avoid some power equipment like cultivators and power lawn mowers
M2 must be careful of pollen and irritating pesticides
S1 except mowing lawns and related yard work
S2 those which can be done seated, such as raising and caring for house plants, breeding and grafting activities
S3 raising and caring for house plants, breeding and grafting activities

370 Raising, Caring for and Breeding of Plants

DD: 635 LC: SB

Gardening is an avocational activity which can be carried on at many different levels of complexity and which can be adjusted to suit the needs and abilities of the individual. Whether he limits himself to a few potted plants on a windowsill or extends his activities to the cultivation of a wide variety of fruits and vegetables, almost anyone can develop a green thumb and experience the peculiarly human delight which man takes in nurturing growing things.

Although gardening is in many ways a solitary activity, it does have social aspects. The enthusiast will find garden clubs in almost any community; these can serve as a forum for the exchange of ideas as well as cuttings and slips. Plant care can be a satisfying shared activity; people working together with the same goal and caring for and about the same plant cannot help coming to care about each other as well.

For the individual who tends to be anxious or nervous, gardening can be a particularly soothing activity, bringing its own kind of peace. Plants, so dependent upon the natural seasonal cycle, can rarely be hurried, and the gardener will find himself working not against nature, but in harmony with it.

For further information see:

National Safety Council, Safe Use of Pesticides. Safety Education Data Sheet no. 92 (revised), 425 N. Michigan Ave., Chicago, 60611.

371 Raising and caring for house plants

DD: 635.965 LC: SB 419

An indoor garden can be begun with a minimal outlay in terms of time, money, and expenditure of physical energy. Once enthusiasm is aroused, the indoor gardener can move on from simple, easy-to-care-for plants to the more delicate varieties, and will soon take pride in his ability to produce healthy plants and coax forth reticent flowers.

Caring for house plants is never physically strenuous: there is rarely need to fight the battles against weeds or insects in which the outdoor gardener must engage. The most necessary talent for this kind of gardening is the kind of patience which can watch a plant grow and develop and can take pleasure in the process without becoming bored or losing interest in the project.

The successful indoor gardener will soon discover that few gifts are more appreciated than a thriving young plant grown from an offshoot of one of his own favorites.

372 Lawn care

DD: 635.964, 716 LC: SB 197-201, SB 433

In addition to requiring greater amounts of space and greater financial outlay

(cont. on next page)

372 Lawn care (cont.)

than raising houseplants, lawn care generally requires more mobility. Available power tools (mowers, edgers, etc.) can, of course, take much of the physical drudgery out of lawn care. Still, if the lawn is to become a smooth grassy expanse which can be a source of pride, dandelions have to be pulled, a watering and feeding schedule must be set up, and fertilizer and seed have to be spread.

Lawn care could be an excellent activity for the minimally disabled, especially for those males who feel that gardening with flowers is a "feminine" occupation, but have happy memories of boyhood lawn-mowing days.

373 Gardening with decorative seed plants and flowers

DD: 635.9 LC: SB 403-419

The great variety of seeds which can be obtained by the amateur gardener at very low prices has made gardening with seed plants and flowers one of the most popular types of gardening. Plants which may be grown from seed range from those which require only inches of earth and occasional weeding and watering to those which require a great deal of sophisticated care.

As in any decorative gardening, planning is of the utmost importance in gardening with decorative seed plants and flowers. The season at which the plants will flower must be taken into consideration, as well as the size and color of the plant and its flowers. Seed catalogs become the gardener's wishing books, since most of these contain the information necessary for garden planning, and the gardener will find a ready challenge in trying to raise plants which look like those pictured in the catalog. This type of gardening also leads naturally into other activities, like 521 Flower arrangements.

374 Gardening with ornamental trees and shrubs

DD: 635.976-.977 LC: SB 435-436

Gardening with trees and shrubs requires an initial financial outlay quite a bit larger than that necessary to plant a garden using seeds, since trees and shrubs must usually be purchased singly from a nursery. Once purchased and planted at carefully chosen sites, however, they will give years of pleasure.

The amount of care in terms of pruning, spraying, etc., required depends largely upon the type of plant selected; many require no more than water and annual or semi-annual pruning when they are once established in a favorable spot.

375 Vegetable, fruit and grain gardening

DD: 635.6 LC: SB 320-352 SB 189-192

The growing of vegetables, fruit, and grain differs from purely ornamental gardening in that its purpose is primarily utilitarian rather than aesthetic. The gardener who sets up a miniature farm, in addition to deriving pleasure from a part played in the growing of living things, can take justifiable pride in the fruits of his labor.

Like other types of gardening, vegetable, fruit, and grain gardening can be carried on at many different levels and on many different scales. Since it generally lends itself to a larger operation and is less subject to personal taste than is ornamental gardening, this type of practical gardening is particularly suitable to group activity.

One of the newer movements in this type of gardening is the growth of popular interest in organic methods. Since the amateur farmer has less at stake than does the professional, he can afford to experiment and enjoy the idea of eating "natural foods" which are the product of his own work.

376 Gardening with fruit trees

DD: 635.977 LC: SB 354-379

In terms of its utilitarian ends, gardening with fruit trees is similar to vegetable, fruit, and grain gardening. As in any work with trees, however, more patience is required than is needed for seed gardening. There is often a gap of several years between the time a sapling is planted and the tree first begins to bear fruit in any quantity. Gardening with fruit trees must be considered a long-range activity. The gardener who is able to acquire an orchard which has been in existance for several years is usually better off than the gardener who attempts to begin an orchard from scratch. No matter how run-down the older orchard may be when the gardener begins to work with it, he has at least the advantage of time.

Although basically utilitarian in purpose, an orchard or a single tree in full blossom or heavy with fruit can certainly provide aesthetic pleasure similar to that found in any carefully planned flower garden.

377 Gardening with mushrooms

DD: 635.8 LC: SB 353

Mushroom gardening is becoming more popular as more and more people become interested in these edible fungi. Since mushrooms grow best in dark, damp places, the requirements for a mushroom garden are somewhat different from those of other types of gardens. The enthusiast will be rewarded, with a supply of the basic ingredient of such culinary delights as simple sauteed mushrooms or the perfect mushroom souffle.

378 Breeding and grafting activities

DD: 635.91 LC: SB 119-139, SB 125

Breeding and grafting can add new dimensions to the activities of the fairly sophisticated gardener. Necessary materials are not extensive; the gardener will probably find himself becoming remarkably well-informed in the fields of botany and genetics, and may well develop an interest in general biology in his quest to understand why things work the way they do. The skilled breeder may even attempt to induce and foster mutations of his own.

Simple texts on genetic theory can get the gardener started in his work on breeding; more advanced texts can usually be found in libraries.

Grafting is usually thought of with regard to trees and woody plants; fruit trees (cf. above, 376 Gardening with fruit trees) especially benefit from grafting. Sometimes as many as three or four varieties of fruit can be grown on a single tree.

Environmental Factors		Social-Psychological Factors	
Indoor	Outdoor	Aesthetic	Utilitarian
No specific environment	Specialized environment and/or climate	Creative	Pre-patterned
		Concrete	
Modicum of space	Unlimited space	Group effort	Individual effort
Equipment a major factor		Unstructured	
		Unsupervised	
Equipment not necessarily at hand		Opportunity for recognition	Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Pets - $0.50 (goldfish)-100.00 (pedigree dogs)
Equipment - 2.00-500.00

prices vary greatly according to type of animal desired and amount of equipment

For further information see:

Moore, Clifford B., The Book of Wild Pets. Boston: Charles.T.Branford Co., 1954.

Miller, H.H., Speaking of Pets. New York: Fleet Publishing Corp., 1958.

Impairment Limitations

blind	M1	balance	M2	hands impaired:	1	2
low vision	+	seizures	M3	reaching	+	0
hearing	+	aphasia:		handling	+	0
speech	+	receptive	+	fingering	+	S1
retardation	+	expressive	+	feeling	+	S2
memory	+	mixed	+	no hands	0	

impaired:					
stooping	M2	wheel chair	M2	bed patient	M1
kneeling	+	semi-ambulant	M2	respiratory	+
crouching	M2	Class III heart	+	Energy Expenditure in METS: 1.5-8.0	
crawling	+	Class IV heart	M4		

M1	should enjoy and be able to handle simply having the pet around, and performing basic activities, such as combing, brushing dogs
M2	safe seating facilities; small, domesticated pets
M3	small, tame, easy to care for pets
M4	would enjoy just having the pet around
S1	small animals with small food containers would require fingering
S2	guard for biting, cuts from the scales, etc.

380 Animal Care, Training, Breeding and Exhibiting

DD: 636-638   LC: SF 263-269, SF 106-121

At some time in the life of the average American, the vestiges of Adam awakened and compelled him to tame and subjugate the lower creatures. This inner stirring produced the household pet phenomenon, starring a cast of thousands, the common goldfish to the mighty lion, depending on the wealth and eccentricity of Adam's successor. The more common fish, turtle, cat, dog, horse, and inoffensive rodent varieties comprise the vast majority of pets, although exotic strains of these species have at times been introduced by the more imaginative. These imaginative innovations have sometimes been extended to keeping poisonous snakes, tarantulas and jungle animals, as well as the less frightening but still extrordinary bears, deer and tropical birds.

Whatever the choice, caring for pets is not so casual a task as might seem from its extensive following. Most pets require special attention, expecially young pets. While entrusting them to inexperienced human hands may not be so comfortable for the pet, the development of responsibility and concern for a fellow creature in the human is a desirable side effect. Most times the care required by the animal is not so specialized and difficult as to be handled by only a very few. The problem is mostly in disciplining the owner to attentive and proper handling of the animal in his care.

In many man-pet relationships, a strong bond of affection results. This occurs most often in the "boy and his dog" cases, where the genuine love and devotion of the two develops particular lasting and admirable personality traits. The experience is not limited to dogs or boys. Many adults experience affectionate attachment to their pets, devote many hours in their care, take special pains in breeding them and showing them off. Again, the discipline required of the pet is equalled by that required of the trainer. One might say, then, that this taming and subjugating is reciprocal.

For those with difficulties in expressing themselves and their emotions, an openly affectionate, loyal and uncritical pet might start them on the way to developing human relationships. Even for the less socially inhibited, the demands of responsible, loving attention for a living creature strengthens socially desirable characteristics.

On another realm, those who are experienced and/or enjoy working with living things might turn to care, training, breeding of animals in its more professionally attentive capacities as necessary, demanding and productive work. While physical handicaps might be limiting factors, age, implying experience, might be quite an asset.

For further information see:

Keating, Ted. (ed.), The Outdoor Encyclopedia. New York: A.S. Barnes and Co., 1957.

National Safety Council, Animals in the Classroom. Safety Education Data Sheet No. 37 (rev. 1963), 425 N. Michigan Ave., 60611.

Environmental Factors

Indoor	Outdoor
No specific environment	Specialized environment and/or climate
Modicum of space	Unlimited space
Requires little or no equipment	Equipment a major factor
Equipment normally at hand	Equipment not necessarily at hand

Social-Psychological Factors

Aesthetic	Utilitarian
Creative	Pre-patterned
Abstract	Concrete
Group effort	Individual effort
Structured	Unstructured
Supervised	Unsupervised
Opportunity for recognition	Little opportunity for recognition

Cost of equipment and supplies: 1972 price range

Microscope - $9.99 - 500.00
Chemistry set - 3.99 - 28.88
Telescope - 18.88 - 112.95
Rock hammer - 3.00 - 6.00
Magnifying glass - 0.50 - 2.50

Impairment Limitations

blind	M1
low vision	M2
hearing	M3
speech	+
retardation	0
memory	0

balance	+
seizures	+
aphasia:	
receptive	0
expressive	M3
mixed	0

hands impaired:	1	2
reaching	+	M4
handling	+	M4
fingering	+	M4
feeling	+	+
no hands	M4	

impaired:

stooping	S1
kneeling	S1
crouching	S1
crawling	S1

wheel chair	+
semi-ambulant	+
Class III heart	M3
Class IV heart	S2

bed patient	S2
respiratory	M3

Energy Expenditure in METS: 1.6 - 8.17

M1	can read braille books, listen to tapes, records, T.V. and lectures
M2	can read large print publications
M3	can read books, watch T.V., demonstrations, go on field trips and do their own exploration, experimentation or observation
M4	can carry on inside activities by having special attachments to turn book pages, adjust microscope, etc. or a companion to assist
S1	can do every thing but field trips for rock collecting and archeological "digs"
S2	can do only sedentary activities

390 Natural Science Activities

DD: 500 LC: Q

One of the strongest motivations of modern man is curiosity. When man's question "why" leads him to the observation and study of natural phenomon, he ends up in one of the natural sciences. "If it screams or howls, it's biology; if it stinks,its chemistry; if it doesn't work, it's physics."

There are many books and magazines written at an introductory level which can serve to acquaint the avocational scientist to his chosen field. Scientific American is one magazine which deals with topics from various sciences at a reasonably sophisticated level but which only assumes a laymans background. The avocational scientist may graduate to the more complicated technical journals which are available at most college and large-city libraries. He may want to seek out lectures on topics which interest him and will probably find that these abound in large cities and university towns.

Many of the introductory books contain simple experiments which the avocational scientist can use to convince himself of physical laws. He may also use these experiments to astound his friends, since they frequently appear to defy common sense.

Many people with scientific training in one area pick up a second science as an avocation. Relieved from the necessity of earning a living, the professional scientist may pick up a second science in order to enjoy it without the necessity of producing.

Although it is unlikely that the avocational scientist will make great contributions to any field, he does gain the satisfaction of an increased understanding on a natural phenomona.

391 Archaeology

DD: 913-919 LC: CC

Archeology involves the study of past civilizations through the material remains of past human life and activities. Much can be learned about past peoples through careful study of their tools, art or weapons. Activities in archaeology may range from collecting arrowheads and other Indian artifacts found in your own back yard to the study of the ancient civilizations of Greece, Rome, Asia Minor, or South America.

Archaeology is probably the only field of all the natural sciences where the contributions of amateurs have equaled the contributions of professionals. Many of the greatest archeological treasure troves were discovered by amateurs pursuing their hobby. However, much work and great amounts of patience are necessary for archelogical investigations. If the amateur should be lucky and discover what appears to be a major find, he should be cautioned to seek professional help. Much information can be lost by simply moving articles from their original positiions, and much seemingly worthless material may be of major importance.

392

392 Astronomy and meteorology

DD: 520 LC: QB 801-999

Astronomers are known as "stargazers" simply because this is the major part of their field. Through the study of stars and other celestial bodies, astronomers hope to learn of the creation of the universe.

The amateur astronomer can be content with much more reasonable goals. Ever since the ancient Greek mariners grouped the stars into constellations, people have spent hours seeking to locate the pictures which the Greeks saw in the heavens. Since many of the visible constellations change with changing seasons there is a continuing change in the scenario.

Many of these constellations are visible to the naked eye if one knows where to look. With the purchase of a relatively inexpensive telescope, the amateur is exposed to many other wonders of the heavens such as the craters of the moon, the moons of Jupiter, or the binary stars systems. He can view satellites sent into orbit by the U.S. or study annual showers of meteors.

Many local societies offer shows at planatariums, large darkened rooms where the patterns of the heavens are projected onto rounded ceilings by strategically located lights. This frees the amateur astronomer from the largest inconvenience of his work...the fact that to view the heavens he must work at night.

Other problems to the amateur are caused by city lights which tend to render the fainter celestial objects invisible and by large buildings which obstruct views of the horizons. Thus a person living in a large city may be forced to travel to the outskirts if he wishes to gain an unobstructed view of the heavens.

Meteorology is the study of weather and the art of weather forecasting. Although anyone can obtain the U.S. Weather Bureau forcast by watching the evening news, it can be more fun to try to predict the weather without the news and then compare your forecast, the Weather Bureau's and what is actually the weather. Through the years many people have come up with widely varying formula's for predicting the weather. A radio station on the west coast, predicts the weather by counting the number of mountain goats on neighboring mountains. Large numbers of goats are taken as an indication of fair weather. Although this may not be terribly scientific, their accuracy to date has been better then that of the weather bureaus.

For those with a more scientific bent, the library contains many books on cloud formations, barometric pressure changes and their relations to the weather. The amateur, after some study could use these as aids to weather predicting.

393 Botany or Horticulture

DD: 580 LC: QK

Botany is that branch of biology which deals with the study of plants. As an avocation, the field of botany holds much promise for anyone who would like to be the proud possessor of a green thumb. Flowers and decorative plants lend a colorful touch to any room. They can be used as centerpieces, conversation pieces or gifts for friends. Although plants require periodic care, the total time spent may be as large or as small as the individual wishes, simply by increasing the number and/or kinds of plants which he maintains. The beginner is probably well advised to start with some of the plant types which do not require very much attention and are reasonably sturdy, such as the ivies. A more advanced student may wish to concentrate on more delicate plants or plants which require special conditions of temperature, sunlight or humidity. He may wish to grow desert plants such as cactus or he may wish to grow tropical plants such as orchids.

The very advanced student may wish to breed his own strains of plants. This is done by controlling the fertilization and thus the evential seed production. He may wish to grow a strain with a flower of a certain color and would do this by breeding plants nearest to this color with each other through several generations. Local or national flower clubs offer assistance to the beginner as well as encouragement in the form of prizes and recognition for those who create the best new flower.

Biological mutations in plants:

This activity is an attempt to produce meaningful mutations in plants, increasing their productivity and the stamina of specific species. Research and experimentation with such mutations may have many useful implications in the ongoing effort to produce more food for the world's population.

There are many factors which can cause genetic changes (mutations), including intense light, extreme cold, and radiation.

How to go about biological mutation using radiation as the source:

The difficulty for the individual who wishes to engage in this kind of experimentation is in finding a source of radiation and a qualified technician to operate the machine. In a hospital one might perhaps be able to obtain the aid of a physician.

There are two stages in the plant's life at which one may intervene with radiation: the seed stage and the plant stage (which extends from the moment the seedling germinates to its reproductive stage). When trying to radiate seeds it is important to remember that the seed's shell may be impervious to soft sources of radiation like alpha rays, and that the experimenter has little control in aiming the radiation.

When seeds are radiated, the entire organism, not specific areas, is affected. This may be just what one desires, if one is trying to determine, for example, the effect of radiation on the growth of the whole plant, on its reproductive capacity, longevity, etc. On the other hand, in radiating a plant, one can

(cont. on next page)

radiate specific sections of the plant--flower, root, leaves, or stalk or stem--and try to discover the effects of selective radiation.

Having decided upon the experiment, one should form a hypothesis as to the results one hopes to find; this will usually help keep the experimenter from straying too far from the experiment. The second step is to set up a meaningful procedure, allowing for control groups, as few varying factors as possible, and eliminating, as much as possible, sources of error. Upon completion of the experiment one should observe the results and determine whether or not the hypothesis was correct, and, if not, pose the question, "why?" From these results, it should be possible to devise another experiment to continue where the first left off.

If a source of radiation is not available, selective breeding is a satisfactory alternative. Desired traits can be bred in, and undesireable traits bred out. The basic information or background knowledge needed is not extensive; acquaintance with the studies of Gregor Mendel will give the individual a fairly good idea of how to begin. Patience is required of the individual who wishes to engage in selective breeding; success with a first attempt is rare.

One disadvantage of this activity is that once the experiment is begun, there is little that the individual can do to help it along. Imagination is the greatest asset in overcoming this problem. Other experiments along the same line or in other areas of plant life can be started at the same time. Extreme patience is essential, though: there is no guarantee that an experiment will succeed or that a particular experiment will show the results sought. Science and experimentation have been known to be frustrating and often live up to this reputation. A person who lacks self-confidence might experience difficulty with this activity.

394 Chemistry

DD: 540 LC: QD

Probably more than any other science, chemistry is responsible for the comforts of modern life. Whether it is the teflon that coats your frying pan, the freon that cools your refrigerator, or the plastics that compose your dishes, chemistry has been involved. As a result of its tremendous impact, newspapers and other media contain a great number of articles which deal with chemical areas. The avocational chemist can gain considerable satisfaction by simply interpreting these articles to interested friends.

The American Chemical Society offers several publications which are intended for high school or college students and thus could serve as sources of information for the avocational chemist. Chemistry sets, containing the laboratory apparatus and the chemicals necessary for simple experiments, can be purchased at almost any large department or hardware store. Some caution must be used with these sets, for there is always some danger of chemical burns or poisoning when working with chemicals. However, in most of these sets, extreme care is taken to include only non-toxic or very slightly toxic materials. And successfully completing an "experiment" is fun even if you are not the first person to do it.

For further information see:

National Safety Council, Chemicals. Safety Education Data Sheet No. 14 (rev.) Chicago: 425 N. Michigan Ave., 60611.

National Safety Council, Safety in the Chemistry Laboratory. Safety Education Data Sheet No. 59 (rev.), 1963.

National Safety Council, Laboratory Glassware. Safety Education Data No. 23 (rev.).

395

395 Conservation or Ecology

DD: 574.5 LC: QK 901-989

Within the past several years, many people have realized that, as a country, we are despoiling many of our most valuable natural resources. Pollution of air and water has become a matter of concern to many people. There has even been a change in that which is classified as "resources" with irreplaceable scenery now being added to the list. For these reasons, conservation and ecology have become areas of concern to many people.

Strictly speaking, conservation is an attitude which seeks the wisest use of natural resources; ecology is the science or study of organisms in relation to their environment. However, popularly, ecology has come to stand for an attitude of respect for the environment and an understanding of man's dependence on it.

There are several levels upon which the individual may wish to become involved. First of all, because there is a problem of public apathy on ecology issues, there is a need for people willing to work to call public attention to them. This can take the form of writing letters to officials, using voting powers wisely, and publicizing local conditions contrary to an ecology attitude. A second level of involvement may be an individuals efforts toward a recycling economy, since this is the direction in which we must move to protect our resources as much as possible, or towards beautifing the city, or towards wise use of resources. Many groups have been formed to foster this type of individual action, and perhaps the individual may be interested in joining one of these to make himself more effective.

On yet another level, the individual may wish to study the science of ecology. Given the current interest in ecology, the individual who has spent some time in study of the basic principles is frequently in demand as a resource person. Many people who are concerned but do not know what to do about the problem, can be counseled by the person who has spent time studying the basic principles.

Because of man's dependence on his environment, some knowledge of ecology is an essential for any individual who in any way affects the environment. This includes all people who are living.

For further information see:

Odum, E.P., Fundamentals of Ecology. 3rd. ed., Phil: W.B. Saunders Co., 1971.

396 Geology

DD: 550 LC: QE

Geology is the study of rocks, minerals, and the formations in which they occur. As a profession, it is used in predicting where to drill for oil or water, establishing solid foundations for buildings, and predicting mineral deposits. As an avocation its most frequent form is the collection of rocks, minerals and/or semiprecious stones.

The beginner is well advised to invest in a simple handbook outlining the various types of stones and areas in which they are likely to be found. It is also wise to invest in some outdoor clothing and good hiking boots since collecting may involve walking considerable distances outdoors. As the collector becomes more advanced, he may wish to travel to areas where certain specimens are likely to be found.

Presentation of the collection is an important part of this avocation. Many collectors simply display their finds on tables or shelves, in the condition in which they were found. With the purchase of polishing equipment, the collector can take the rough stones and polish them to highlight their natural color and shape. In effect, the collector is now involved in the production of "gems." These "gems" can be displayed in racks or on shelves, or they can be used in the manufacture of jewelry or other decorations. Work of this type involves a good deal of patience and some manual dexterity. However, the collector who has the patience to persist has vastly increased the beauty of his original collection.

397 Physics

DD: 530 LC: QC

With the advent of the technological era of modern man, the science of physics has come to the foreground of all of the sciences. The Apollo program of the National Aeronautics and Space Administration (NASA) which landed a man on the moon and returned him to earth is perhaps the best example of the application of well known physical principles in an effort to increase man's control over his surroundings.

Physics involves the study of force, motion and change. As a modern discipline it has come to include electricity, magnetism, optics and radiation. Because of its wide range of subject material, those interested in the study of physics may discover this avocation in a variety of ways. Perhaps an interest in electricity will cause an individual to seek out a basic physics text to determine the basic laws of electricity. Frequently the pursuit of another science leads one to physics for background material. This is the case when an astronomer turns to physics to learn more about optics, or when an ecologist turns to physics to learn more about radiation and its effects on life forms.

As in chemistry, the interested beginner may wish to perform experiments to convince himself of a given physical law. He may use these experiments to astound his friends since they frequently defy "common sense." With physics experiments there is less danger than with chemistry experiments. Frequently needed apparatus can be obtained from materials at hand. However, physics experiments often require some knowledge of mathematics and this may be a disadvantage to the avocational physicist.

398 Zoology

DD: 590 LC: QL

Zoology is that branch of biology which deals with animal life. It includes the study of birds (ornithology), the study of insects (entomology), and the study of fish (ichthyology) as well as mammals, amphibians and crustaceans.

Many people become interested in various areas of zoology through their obsevation of some particular type of animal. For example, a person obseving a bird may become curious as to the various types of birds, their habits, and their habitats. He may be led by a study of feeding habits to the study of insects, or fish, or perhaps to botany.

Interests in this field may be as simple as collecting various specimens of butterflies from the neighborhood and framing them along with their specific information. It may become as complex as study of the migratory habits of bird species.

Zoology can also be explored by study at local zoos or museums where animals can be watched live or where evolution can be followed through the course of centuries in the course of an afternoon.

Libraries are a handy source of material, but the more specialized student may turn to societies such as the Audibon society which deals exclusively with birds in order to find more specific information in the area of his interests.

For further information see:

National Safety Council, Animals in the Classroom, Saftey Education Data Sheet No. 37 (rev. 1963). Chicago: 425 North Michigan Avenue, 60611.